

1934.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

REPORT

OF THE

DIRECTOR-GENERAL OF PUBLIC HEALTH

NEW SOUTH WALES,

FOR THE YEAR 1933.

PRESENTED BY THE MINISTER FOR PUBLIC WORKS AND HEALTH
(THE HON. REGINALD WALTER DARCY WEAVER, M.L.A.).

The Royal Sanitary Institute
Library.

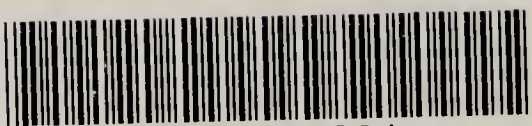
Ordered by the Legislative Assembly to be printed, 18 December, 1934.



SYDNEY: ALFRED JAMES KENT, I.S.O., GOVERNMENT PRINTER.

1935.

Re 2019



22501407224

1934.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.



REPORT

OF THE

DIRECTOR-GENERAL OF PUBLIC HEALTH,

NEW SOUTH WALES,

FOR THE YEAR 1933.

PRESENTED BY THE MINISTER FOR PUBLIC WORKS AND HEALTH
(THE HON. REGINALD WALTER DARCY WEAVER, M.L.A.).

Ordered by the Legislative Assembly to be printed, 18 December, 1934.



SYDNEY: ALFRED JAMES KENT, I.S.O., GOVERNMENT PRINTER.

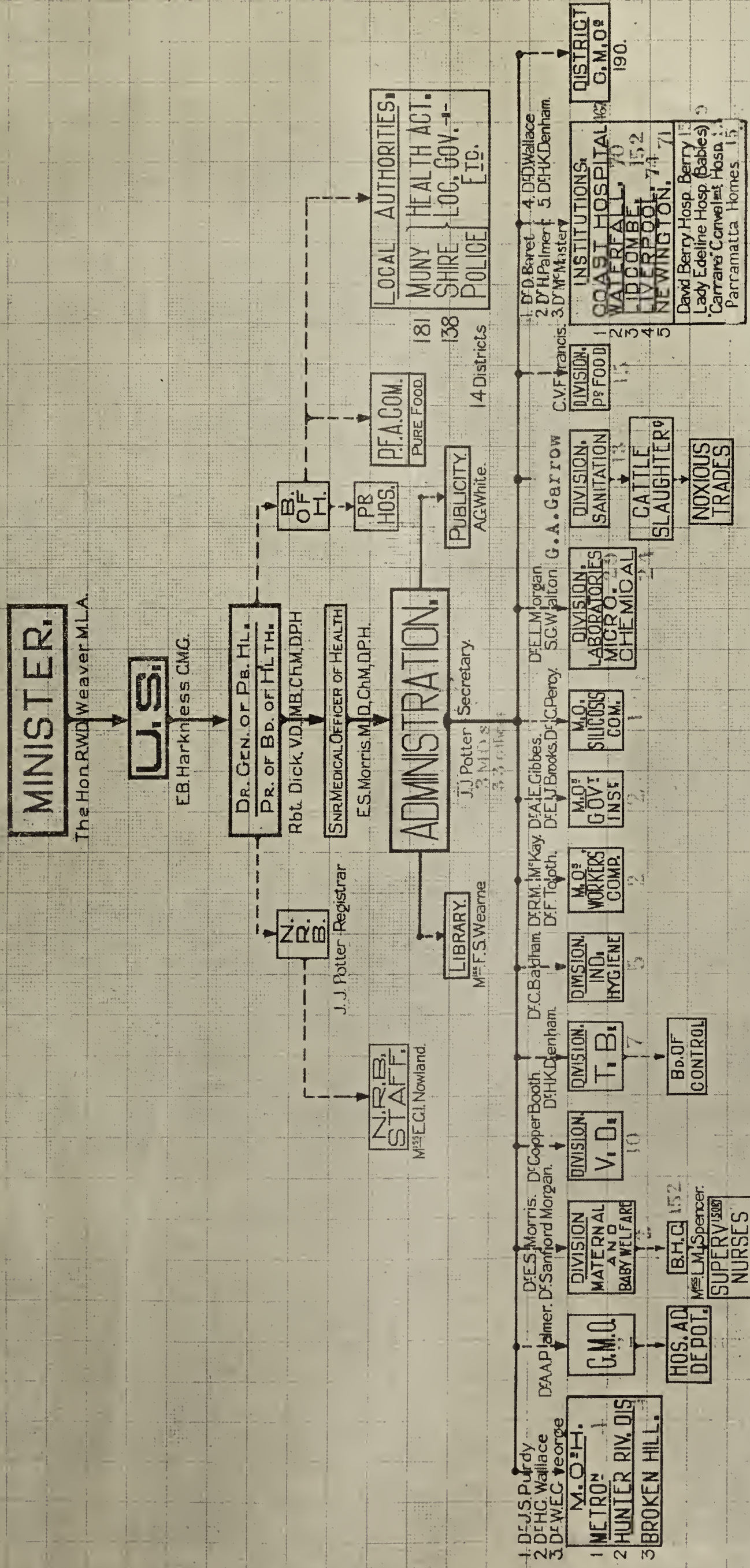
1935.

[7s.]

WILSON INSTITUTE	
1933	
+	
Am-Rip	
WA28	
.KAE	
N53	

1933

HEALTH DEPARTMENT.
OFFICE OF THE DIRECTOR GENERAL OF PUBLIC HEALTH.





Digitized by the Internet Archive
in 2019 with funding from
Wellcome Library

<https://archive.org/details/b31485248>

DEPARTMENT OF PUBLIC HEALTH

TREASURER

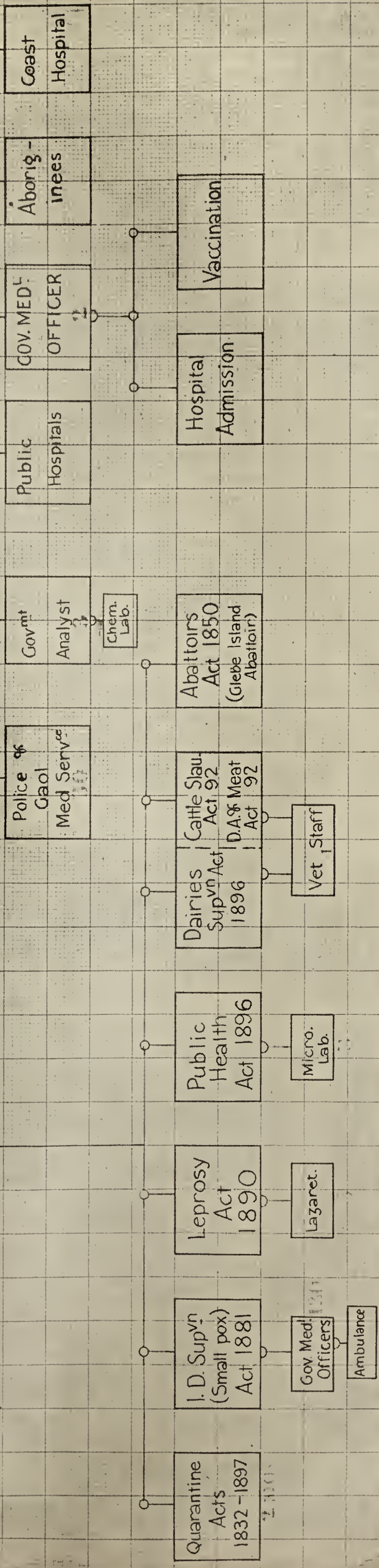
BOARD OF HEALTH

PRESIDENT B^D H^{LTH}

CHIEF SECRETARY

CHIEF MED^L OFFICER

1898



**Office of the Director-General of Public Health, 93 Macquarie-
street, Sydney.**

Members of the State Board of Health, 1932.

Robert Dick, M.B., Ch.M., D.P.H. (President).

Cecil Purser, M.B., Ch.m.	...	...	...	...	...	Member, Board of Health.
A. S. Watts (President, Chamber of Commerce)	...	...	...	do	do	
William George Armstrong, M.B., D.P.H.	...	...	...	do	do	
The Hon. Frank Edgar Wall, M.D., M.L.C.	...	...	...	do	do	
B. G. Littler, Esq.	...	...	...	do	do	
Mrs. Euphemia Jean Maincke	...	...	...	do	do	
Mrs. Emma Linda Palmer Littlejohn	...	...	...	do	do	
A. L. Parker (Lord Mayor of Sydney)	...	...	...	do	do	

Administrative Staff.

Director-General of Public Health and Commissioner for Venereal Diseases: Robert Dick, M.B., Ch.M., D.P.H.

Senior Medical Officer of Health and Director of Maternal and Baby Welfare: E. Sydney Morris, M.D., Ch.M., D.P.H.

Assistant Medical Officer of Health: T. L. Dunn, M.B., B.S., D.P.H.

Secretary: James J. Potter.

Divisions and Branches.

The following Divisions are controlled by the Director-General of Public Health:—Maternal and Baby Welfare; Tuberculosis; Venereal Diseases; Industrial Hygiene; Government Medical Officers for Sydney; Medical Officers of Health, Metropolitan, Newcastle and Broken Hill Districts; Microbiological Laboratories, Sydney and Broken Hill; Chemical Laboratory; Pure Food; Cattle Slaughtering; Sanitation; Publicity, etc.

The Hospital Division comprises The Coast Hospital, the David Berry Hospital, five State Hospitals and Homes, Waterfall Sanatorium (Tuberculosis), Lady Edeline Babies Hospital, Strickland Convalescent Hospital, and the Leper Lazaret.

Legislative Enactments.

The Minister of Health is charged with the administration of the following Acts execution of which is left to the Director-General of Public Health and the staff working under his control:—Cattle Slaughtering and Diseased Animals and Meat Acts, 1902-1910; Diseased Animals and Meat (Amendment) Acts, 1933; Food Preservation by Sulphur Dioxide Enabling Act, 1920; Noxious Trades Act, 1902; Private Hospitals Act, 1908; Public Health Acts, 1902-1932; Pure Food Act, 1908; Wine Adulteration Act, 1902. Burials in closed cemeteries and the exhumation of bodies for the purpose of re-interment, etc., is also dealt with.

CONTENTS.

	PAGE.
(a) Letter of Presentation, and	1
(b) Brief historical review of health problems and sanitary progress in New South Wales, with especial reference to the period 1898-1933 (Supplement, p. 115)...	115
Vital Statistics, 1933—Extract from Government Statistician's Report	6

SECTION I.

A.—Public Health Administration.

Chemical Laboratory : Report of the Government Analyst (Mr. S. G. Walton)	11
Pure Food Act, 1908 : Report of the Chief Inspector (Mr. C. V. Francis)	18
Report of the Chief Sanitary Inspector (Mr. T. A. Curry)	20
Private Hospitals Act : Report by Dr. T. L. Dunn	22
Medico-Legal Section and Hospital Admission Depot ; Report of the Government Medical Officer for Sydney (Dr. Arthur Palmer)...	24

B.—Division of Maternal and Baby Welfare.

Report of the Director (Dr. E. Sydney Morris)	25
------------------------------------------------------	----

C.—Communicable Diseases.

Return of Diseases notifiable under the Public Health Acts for year ended 31st December, 1933, and graphs (F. S. Wearne)	37
An outbreak of Typhoid fever at a Religious Convention, probably caused by a "carrier," February, 1933 (Dr. E. Sydney Morris)	47
Venereal Diseases Act, 1918 : Report by the Commissioner (Dr. Robert Dick) for the year ended 31st December, 1933	54

D.—Tuberculosis Division.

Report of the Director (Dr. H. K. Denham)	58
--------------------------------------------------	----

E.—Industrial Hygiene.

Report of the Medical Officer for Industrial Hygiene (Dr. Charles Badham)	63
----------------------------------------------------------------------------------	----

SECTION II.—MEDICAL OFFICERS OF HEALTH.

Metropolitan Combined Sanitary Districts : Report of the Medical Officer of Health (Dr. J. S. Purdy)	67
Hunter River Combined Sanitary Districts : Report of the Medical Officer of Health (Dr. H. G. Wallace)	72
Broken Hill Sanitary District : Report of the Medical Officer of Health (Dr. W. E. George)	75

SECTION III.—HOSPITALS AND INSTITUTIONS.

Report upon the State Hospitals, etc., under the control of the Director-General of Public Health :—

1. Coast Hospital, Little Bay, and Auxiliary, at Randwick ; Report of the Medical Superintendent (Dr. Henri V. D. Baret)	76
2. Leprosy in New South Wales (Dr. Henri V. D. Baret)	91
3. David Berry Hospital, Berry	95
4. Lady Edeline Hospital for Babies, " Greycliffe," Vaucluse	95
5. Strickland Convalescent Hospital for Men and Women, " Carrara," Rose Bay	96
6. State Sanatorium for Consumptives, Waterfall (Dr. H. W. Palmer)	97
7. Lidecombe State Hospital and Home for Men, Lidecombe (Dr. R. M. McMaster)	101
8. State Hospital and Home for Men, Liverpool (Dr. Donald Wallace)	103
9. State Hospital and Home for Women, Newington (Dr. Howard K. Denham)	104
10. State Home for Aged and Infirm Men, George-street, Parramatta	105
11. State Home for the Blind, and Men suffering from Defective Sight and Senility, Macquarie-street, Parramatta	105
12. Statistical Tables for Institutions, Table 1, Nos. 4-5 (Mr. S. Warner)	105
2, Nos. 6-11	106

SECTION IV.—MICROBIOLOGICAL LABORATORY.

Report of the Principal Microbiologist (Dr. E. L. Morgan)	107
I. Part 1, Statement of routine examinations, and examination of rats for plague	108
II. Post-operative tetanus in N.S.W. during the years 1930-1933 (E. L. Morgan)	111

SUPPLEMENT.

Brief Historical Review of Health Problems and Sanitary progress in New South Wales, with especial reference to the period 1898-1933	115
---------------------------------------------------------------------------------------------------------------------------------------------	-----

Report of the Director-General of Public Health to the Honourable the Minister of Health.

Sir,

I have the honour to present herewith my report for 1933. I have also appended (pp. 115-125), a summary of the salient features of the progress of health and sanitation in New South Wales since the formation of the Board of Health in 1881. It is of interest to note that although New South Wales was the oldest settlement and the administrative centre for so many years, it was the last of the six divisions of Australia in which an organised health service was established.* In 1881 the Infectious Diseases Supervision (Smallpox) Act was passed as an emergency measure to cope with an outbreak of smallpox which had invaded Sydney some months previously; under this one page Act, a Board of Health was constituted on 1st January, 1882, and has functioned continuously since that date. Part 2 of the Noxious Trades and Cattle Slaughtering Act passed in 1894, constituted the Board a body corporate with perpetual succession and a common seal and in the first Public Health Act (passed in November, 1896) it was provided that "after the day when this Act takes effect the number of the members of the Board of Health shall be not less than seven nor more than ten, inclusive of the president, four of whom at least shall be legally qualified medical practitioners."

The Supplemental notes (p.115) are mainly concerned with the progress of health work in New South Wales from the beginning of 1900, when the first outbreak of plague occurred, but a brief survey is made of earlier legislation affecting sanitary administration, and of the events which from time to time focussed public attention on the need for the provision of an adequate health service.

The success of the measures adopted in recent years for improvement of the public health of this State is evidenced by the steady decline in both the general death rate and in the death rate from tuberculosis and typhoid fever. Attention is also directed to the decline in the infant mortality rate, which in 1933 was 39·35 per 1,000 births for the whole State; and 36·82 for the metropolis of Sydney, which now has a population of approximately 1,300,000 persons.

Vital Statistics 1933.—The year was one of general good health, and free from any widespread outbreak of epidemic disease.

The Government Statistician's summarised statement (p. 6) shows a population for the State at 31st December, 1933, of 2,613,776, of whom 1,325,096 were males and 1,288,680 females, a sex ratio of 103 males to 100 females.

Births in 1933 numbered 44,195, equal to a rate of 16·98 per 1,000 of population. This rate is 14·94 per cent. below the average of the previous five years.

Deaths in 1933 totalled 22,322, equivalent to a rate of 8·58 per 1,000. This rate is 2·55 per cent. below the average of the previous five years, but slightly above those for 1931 (8·48) and 1932 (8·44). The infantile mortality rate was 39·35 for the whole State, and 36·82 for the metropolis of Sydney.

The table included in the Statistician's summary (p. 6) discloses that influenza was the only epidemic disease to show an increase in the number of deaths in 1933.

Pure Food Act and Regulations.—Details of the principal activities under this Act are contained in the reports of the Chief Food Inspector (p. 18) and the Government Analyst (p. 11). The latter report gives particulars of the analysis of 27,640 samples, an excess of 2,000 over any previous year. The total included 20,682 samples of milk, of which 16,855 were collected in the metropolitan area; 1·46 per cent. of these infringed the legal standard by being either deficient in fat or in containing added water.

Investigations by the Pure Food Branch disclosed an ingenious method by which separated milk was being illegally mixed with ordinary milk. Country milk on arrival at a depot was separated, and run into a receptacle into which ordinary milk was flowing at the same time, prior to the combined liquid being passed over the cooling coils into storage tanks in the milk room. Thousands of gallons were probably treated in this way, the machinery and other appliances being so arranged as to facilitate the carrying out of this illegal form of standardisation. During the mixing, which was usually done at night, when the milk arrived, tests would be made to ascertain the percentage of milk-fat present. The amount of milk-fat present in the article sold to the public would be about 3·3 per cent. to 3·5 per cent. (the standard provides for not less than 3·2 per cent.). The departmental records show that an average mixed milk, being the bulk supplies forwarded from individual factories to the metropolitan area, is considerably above the minimum standard. An average figure should be about 3·8 per cent. The cream obtained by separating the milk would form an additional source of profit.

The freezing-point test continues to be a valuable means for the detection of suppliers of watered milk. Incidentally, a considerable improvement is apparent in the average figures for solids-not-fat—8·9 per cent. and 9·0 per cent. being quite commonly met with. It is quite possible that this improvement bears some relation to the fact that traders in milk are aware that the freezing point test is now being constantly used by the Department.

Bacterial Testing of Milk.—The Milk Board has arranged with the Department for the bacterial testing of milk to be carried out at Newcastle as well as Sydney; and also for systematic examinations of both supplies to be made for tubercle bacilli by animal inoculations.

Whole-meal Bread.—The composition of the "whole-wheat" breads on the market; use of "flour improvers"; and the effect of coating hams with gelatine prior to momentarily dipping them into a solution of formaldehyde, were among other matters that received special attention by the Analytical Branch during the year.

*First Public Health Acts passed in the Australian colonies and New Zealand:—

Victoria.—Public Health Statute, 1865; Conservation of Public Health Act, 1878.

Queensland.—Public Health Act, 1872; re-enacted and extended, 1884.

South Australia.—Public Health Act, 1873.

Tasmania.—Public Health Act, 1875.

New South Wales.—Infectious Diseases Supervision (Smallpox) Act, 1881; Public Health Act, 1896.

Re-labelling in Australia of Imported Salmon of low grade with first-grade labels.—The practice of re-labelling low-grade salmon with first-grade labels, to which attention was directed in 1932, has apparently been overcome satisfactorily under a regulation, operating from 1st September, 1933, issued by the Commonwealth Government under the Commerce Trades Descriptions Act; and by the Canadian Government requiring that tins must be indelibly branded with the grade of salmon contained in them.

Cattle Slaughtering Act.—The amendment made to Section 15, referred to in my report for 1932, by which Councils are enabled to charge fees to recoup expenditure on meat inspection, is having an excellent effect in country districts in improving the supervision over slaughtered meat. Meat inspectors have been appointed in several of the more populous areas, and appointments are in contemplation in several others. Scales of fees are only fixed after very careful inquiry by the Department, the purpose of which is to ensure that the charges decided upon are the lowest that can be fixed if the inspection is to be of a satisfactory character.

Sewage Disposal.—At the end of 1933 there were—including Sydney, Newcastle and Parramatta—twenty sewered towns in New South Wales. Various methods of treatment are applied for purification purposes, *e.g.*, separate sludge digestion; sludge digestion with partial aeration of effluent, and filtration; septic tanks; septic tank and Kremer-Knoch; septic tank and Imhoff; Imhoff.

In six additional country towns separate sludge digestion plants have been, or are about to be, installed, while the unsewered portion of one town is being connected to the town's sewage treatment plant.

An experiment is in progress for disposal of nightsoil from pail closets by diluting it with sea water.

MATERNAL AND BABY WELFARE.

The Report of the Division of Maternal and Baby Welfare (p. 25), records the careful examination made into the cause of every maternal death; and attention is drawn to the need of provision of additional public maternity beds, of which at present there is a great shortage, especially outside of the metropolis.

Extension of Training Course of Obstetric Nurses.—From 1st January, 1933, the training both of midwives and of general-trained nurses seeking their obstetric certificate was lengthened; in the former case from twelve to eighteen months, and in the case of trained nurses from six to nine months. The curriculum has also been broadened, and now includes definite instruction in infant care and feeding.

Baby Health Centres—Notwithstanding the depression, it was found possible to open two additional Baby Health Centres in the metropolitan area and seven in the country centres of Berrima, Gilgandra, Gunnedah, Mittagong, Moss Vale, South Singleton, and Wellington, bringing the total Centres in operation at 31st December, 1933, to 108—43 metropolitan and 65 country. The infant mortality rate continues to fall steadily, and for the first time on record was below 40 (39·35) for the whole State. In the metropolitan district it fell to 36·82.

INFECTIOUS DISEASES.

Typhoid Fever, etc.—The most notable feature of this section is the satisfactory decline in typhoid fever, the total recorded cases being 188, with 28 deaths. There were also fewer cases of scarlet fever and diphtheria than in 1932.

Typhoid Epidemic due to Carriers.—An account is given on p. 47 of the occurrence in March, 1933, of some thirty-six cases of typhoid fever, with ten deaths, amongst members of a religious convention. The convention was held as an open-air camp at Wattamonderra, in the Cowra district, in the first half of February, about 300 persons attending, who were resident in widely separated parts of the State. The infection was found to be due to J.B., who had recently joined the convention. J.B. was known to be a "carrier," and had been under observation by the department for several years in connection with cases of typhoid fever arising amongst persons who had been in association with him at various times after he had had an attack of typhoid fever in 1918.

The occurrence of three cases of typhoid fever in the Ryde district were also traced to a "carrier," the implicated person being a member of the family who had suffered from typhoid seven years previously. Three years later a married and an unmarried daughter contracted typhoid, and in 1932 a son also developed the disease. Attention was again drawn to the family in 1933, when two nephews and a grandchild contracted typhoid; at the time they were living in the same house as the original patient, who was found on examination to be still excreting typhoid bacilli.

INFECTIOUS DISEASES HOSPITAL FOR WESTERN SUBURBS.

A first unit of fifty beds of the Infectious Diseases Hospital, designed to meet the needs of the western and south-western suburban areas, was opened in November, 1933. This hospital will be administered and staffed in conjunction with the Lidcombe State Hospital, and has been erected in the spacious grounds attached to that institution.

ESTABLISHMENT OF AN EYE CLINIC AT BREWARRINA.

A new departure during the year was the opening of an Eye Clinic in the western division of the State for the treatment of aborigines suffering from contagious ophthalmia or trachoma, which is prevalent in the district. The Aborigines Protection Board erected a suitable building on one of the reserves for aborigines; and patients living in the vicinity and those brought in from a distance are attended to by a resident trained nurse, a medical practitioner in a neighbouring town paying periodic visits to the clinic. The opening of the clinic has been followed by considerable improvement in the eye conditions of a number of sufferers.

POST-OPERATIVE TETANUS.

Included in the investigational work carried out during the year is a report by the Principal Microbiologist (p. 111) on post-operative tetanus in New South Wales during the years 1930–1933. The

report deals with nine fatal cases that occurred in seven different hospitals; all the cases followed abdominal operations. In only one instance (Case 8) was the tetanus bacillus recovered, and in this one case it was recovered from the operation area. In the nine operations five different brands of catgut had been used.

The opinion is expressed that only catgut in glass or similar containers, prepared in conformity with the Therapeutic Substances Act of Great Britain, should be accepted for use, except where the iodine or other equally effective methods of sterilisation are carried out locally under properly controlled conditions.

VENEREAL DISEASES DIVISION.

In 1933 a total of 4,809 notifications were received under the Venereal Diseases Act, a decrease of 33 on the figures for 1932. Of the total notifications, 1,299 were for cases of syphilis (males, 889; females, 410); and 3,197 were for cases of gonorrhoea (males, 2,695; females, 502). Notes on the bearing of these figures and on other aspects of administration of the Act are discussed on p. 54.

An outstanding event of the year was the opening in the metropolis on 12th June of the first continuous male clinic for venereal diseases. This clinic, which has been very greatly needed, is open for twelve hours daily, and also for certain hours on Saturdays, Sundays, and public holidays. The attendances numbered 44,629 between 12th June and 31st December, and it is estimated that there will be an annual registration of approximately 2,500 patients, and about 85,000 attendances. Sydney is now provided with two continuous clinics (one male and one female), and eight non-continuous clinics.

At Newcastle a clinic is under construction, and will probably be completed before the end of 1934. Adequate facilities for treatment of venereal diseases has been a most urgent need in this important seaport city.

Quackery.—Tightening up of the laws for suppression of quackery is an urgent requirement, and may be possible under impending legislation. The department has been able to secure suppression of a number of advertisements concerning sex disease, impotence, etc., under the provisions of the Venereal Diseases Act. During the year the attention of the Federal Health authorities was drawn to certain recently received oversea publications that contained objectionable advertisements.

In another form of advertising extensive use is made of the postal service by inviting persons to send money, either to a post-office box or a city address, for some special form of medical advice or treatment to be supplied to them at a "cut rate." The investigating officer states that this form of advertising appears to yield good financial results.

TUBERCULOSIS DIVISION.

A total of 1,441 notifications of pulmonary tuberculosis for the whole State was received in 1933, a decrease of 44 on the figures for 1932. The deaths from all forms of the disease totalled 1,063, viz., respiratory system, 951; meninges and nervous system, 38; other forms, 74.

It was found necessary to appoint a second medical officer to this division during the year, and a careful record of the work carried out is contained in the report (p. 58). Among the urgent developmental requirements are appointment of additional visiting nurses; and provision of additional clinics.

Waterfall Sanatorium.—In the report of the Medical Superintendent (p. 97) particulars are given concerning the 881 patients under treatment in 1933.

Dr. Palmer again points out that comparatively few of the patients are admitted to Waterfall in that early and suitable stage which would enable the disease to be satisfactorily treated in this ideally situated sanatorium.

Dr. Palmer also directs attention to the provision made for the care and education of the children inmates of Waterfall, and to the remarkably good progress made by those who are sent there.

Amongst matters of importance at present under investigation is an inquiry into the occurrence of tuberculosis amongst nurses and nursing trainees in hospitals.

An investigation is also being made into the amount of sick leave absence of nursing staffs due to infectious diseases and that due to other causes. These investigations are concerned with both general and infectious diseases hospitals and sanatoria.

INDUSTRIAL HYGIENE.

Included in the report of this Division (p. 63) is an account of the systematic investigation into the action of certain dusts on the lungs of a large number of guinea-pigs and rabbits; this investigation was begun three years ago, and is proceeding satisfactorily.

Another investigation that is nearing finality concerns the examination of sixty human lungs showing pneumonocotic changes. This work is being carried out in collaboration with officers of the Analytical Branch and the Department of Mines.

Lead poisoning, particularly in connection with work in accumulator factories, is dealt with, and a table is included which shows the occupations of the sixty men investigated for lead poisoning in 1933, and the diagnosis arrived at in each case.

Arsenic poisoning occurring among men engaged in the destruction of prickly-pear by spraying with arsenic pentoxide in aqueous solution, was also inquired into; as were also some isolated instances of occupational arsenical poisoning, including one fatal case.

Bakers' Dermatitis.—After a free interval of three years, several further cases of dermatitis among doughmakers came under notice in 1933. On analysis of flour samples, it was found that a number contained ammonium persulphate, and action has now been taken which forbids its use in bread making.

Among other cases of dermatitis reported in 1933 were a number among employees at a rubber factory; several of those affected worked in the tire-curing section, but investigation did not incriminate any of the chemicals used.

An inquiry is in progress into the occurrence of tetanus amongst wool-sorters and others associated with the handling of wool from dead sheep.

The need of fixing standards of physical fitness for the drivers of motor vehicles is also being inquired into.

Ventilation of Cinema Theatres, etc.—Several minor investigations were carried out during the year; and a calculation of interest was made in connection with one of the large hospitals to ascertain what effect erection of a new building on the northern side of an existing one would have on the amount of direct sunshine received on the ground and first floors and verandahs of the existing building, in use by convalescing patients.

SECTION II.

This section contains the reports of the Medical Officers of Health of the Metropolitan and Hunter River Combined Sanitary Districts, and the Broken Hill District. The vital statistics, incidence of infectious diseases, and progress in matters of sanitation and preventive medicine during 1933 are discussed by the Medical Officers of Health in charge of each district in their respective reports (pp. 67–75).

More than half the State's total population of 2,613,776 persons, or 51·36 per cent., reside in these three districts, distributed as follows :—Metropolitan District, 1,304,580; Hunter River, 210,970; Broken Hill, 26,930.

SECTION III.

The reports on the various State Hospitals and Homes and on the Leper Lazaret are contained in this section (pp. 76–106). A number of improvements and additions to buildings have been made during the year at several of the institutions. At the Coast Hospital, especially, extensive building operations are in progress.

The buildings in course of erection at the Coast Hospital do not, unfortunately, add materially to the bed accommodation, of which there has been a great dearth in the Metropolis for the past three or four years. The new buildings are mainly for the replacement by modern, up-to-date wards, of the old wood and iron buildings erected some forty or fifty years ago to house the contacts of smallpox cases, and which were later converted to hospital use. The new buildings at the Coast Hospital also comprise an additional operating block, pathology section, X-ray and radium therapy sections, and a comfortable nurses' home. There has also been a re-organisation of the Honorary staffing arrangements at this important hospital.

Discontinuance of the departmental ambulance service.—By an arrangement with the Central District Ambulance the departmental ambulances were discontinued from the end of June, 1933.

It is interesting to note that this ambulance service is more than fifty years old, as it was first instituted for the removal of smallpox patients when that malady invaded Sydney in 1881. This service has always been associated with the Coast Hospital, and expanded as that institution developed. Twenty-five years ago there was quite a fleet of horse-drawn ambulances housed at the Coast Hospital. These were gradually replaced by motor vehicles, and of late years more and more use has been made of the Central District Ambulances. When the departmental service was closed down at the end of June, the two remaining vehicles were handed over to the central organization.

Provision of Additional Convalescent Accommodation for Men and Women at "Carrara," Rose Bay.—During the year "Carrara" Convalescent Hospital at Rose Bay was extended by erection of two additional wards of 40 beds each, so as to provide accommodation for the male patients hitherto treated at Denistone Convalescent Hospital at Ryde, and to double the amount of accommodation hitherto available at "Carrara" for women patients.

The male ward at "Carrara" was brought into use on 5th September, 1933. Denistone House was then closed down, and the area on which it stood is being utilised as the site for the Ryde District Soldiers' Memorial Hospital.

RETIREMENT OF DR. R. J. MILLARD.

Dr. R. J. Millard, who had so ably filled the position of medical superintendent of the Coast Hospital for 25 years, reached the retiring age on 22nd May, 1933, and vacated the position on that date.

Dr. Millard first joined the department in 1899 as Assistant Medical Officer of the Government; he was also Assistant Microbiologist to the Board of Health. For several years Dr. Millard was closely associated with Dr. Ashburton Thompson in the administrative section of the department, especially during the years of the early plague outbreaks, 1900–1907, and was in charge of the outbreaks on the Clarence and Richmond Rivers (1905), and at Kempsey on the Macleay River, 1907.

When Dr. Millard took charge of the Coast Hospital in 1908, the bed accommodation totalled 314, with a daily average of 306 patients; and a total yearly admission of 3,000. When he retired in 1933 the bed accommodation had increased to 880 (Coast, 760; Randwick Auxiliary, 120); the daily average of patients was 760, and the annual admissions, 11,000.

Fortunately the Coast Hospital has not wholly lost its contact with Dr. Millard, as he is still associated with it in the capacity of Honorary Consulting Physician.

DEATH OF MR. T. H. NEELY.

I have with very much regret to record the death of the Board's very able Secretary, Mr. T. H. Neely, which occurred with tragic suddenness at his home at Hunter's Hill on 12th February, 1933. Mr. Neely had left the office apparently in excellent health at the week-end and died on the Sunday from a sudden heart attack.

Thomas Henry Neely was appointed as Secretary in 1914 on the promotion of Mr. G. H. King as Under Secretary of the Ministerial Office.

Mr. Neely's grasp of administrative procedure, his wide general knowledge, and his genial personality made him an ideal occupant of the position, and the expansion of the department and its extended usefulness to the community were the subjects to which he devoted his untiring energies during the nineteen years of his Secretaryship.

Mr. Neely joined the Health Department shortly after the transfer to it of the administration of the State Charities Department, and his valuable assistance in its re-organisation was greatly esteemed by the then Director-General of Public Health, Dr. R. T. Paton. Mr. Neely's helpful assistance in every section of the department's wide activities was highly valued by Dr. W. G. Armstrong during his term of office, and also by myself during my period of close association and friendship with Mr. Neely from 1923 until the date of his sudden death.

Mr. Neely also took a special interest in the framing of the Nurses Registration Act, 1924, and carried out with marked success the duties of Registrar under that Act in conjunction with the post of Secretary to the Department.

ROBERT DICK,
Director-General of Public Health.

Extract from the Report of the Government Statistician, Mr. T. Waites, on the Vital Statistics of New South Wales for the year 1933.

Population.—The population at the end of 1933, was 2,613,776, of whom 1,325,096 were males and 1,288,680 females, the proportion being 103 males to 100 females. During the year the population increased by 21,796, or 0·84 per cent. The excess of births over deaths was 21,873. But owing to the departures exceeding the arrivals by 77, the total increase to the population was 21,796. The mean population was 2,602,037.

Births.—The total number of births was 44,195, equivalent to 16·98 per 1,000 of population, which is 14·94 per cent. below the average of the previous five years. Of this number, 22,799 were males and 21,396 females, the proportion being 107 males to 100 females.

Dividing the State into the Metropolis and remainder of the State, there were 17,083 births in the former and 27,112 in the latter, corresponding to rates of 13·83 and 19·84 respectively.

Deaths.—The deaths during the year numbered 22,322, equivalent to a rate of 8·58 per 1,000 of the population. This rate is 2·55 per cent. below the average of the previous five years.

The total includes 12,727 males and 9,595 females, equivalent to rates of 9·65 and 7·48 respectively per 1,000 of population. The rate in the Metropolis was 9·37 per 1,000 and in the remainder of the State 7·86.

Of the 22,322 people who died during the year, 2,433 were under 5 years of age, 9,761 were aged from 5 to 64, and 10,118 were 65 and over. The rates per 1,000 living in the main groups, under and over 5 years, were 10·44 and 8·40 respectively as compared with 13·77 and 8·25, the average of the previous five years.

Infantile Mortality.—The number of children under 1 year of age who died was 1,739, equal to 39·35 per 1,000 births. To this total the Metropolis contributed 629, or 36·82 per 1,000 births, and the remainder of the State, 1,110, or 40·94 per 1,000 births. The rate for 1933 is 20·63 per cent. below the average of the previous five years. Of the deaths under 1 year of age, 968, or 55·66 per cent., occurred under 1 week, 1,220, or 70·16 per cent., under 1 month, and 1,371, or 78·84 per cent., under 3 months.

Causes of Death.—Of the deaths during the year, the most important causes were as shown in the following statement, which for purposes of comparison, also gives the average number of deaths during the preceding five years, due allowance having been made for increase in population :—

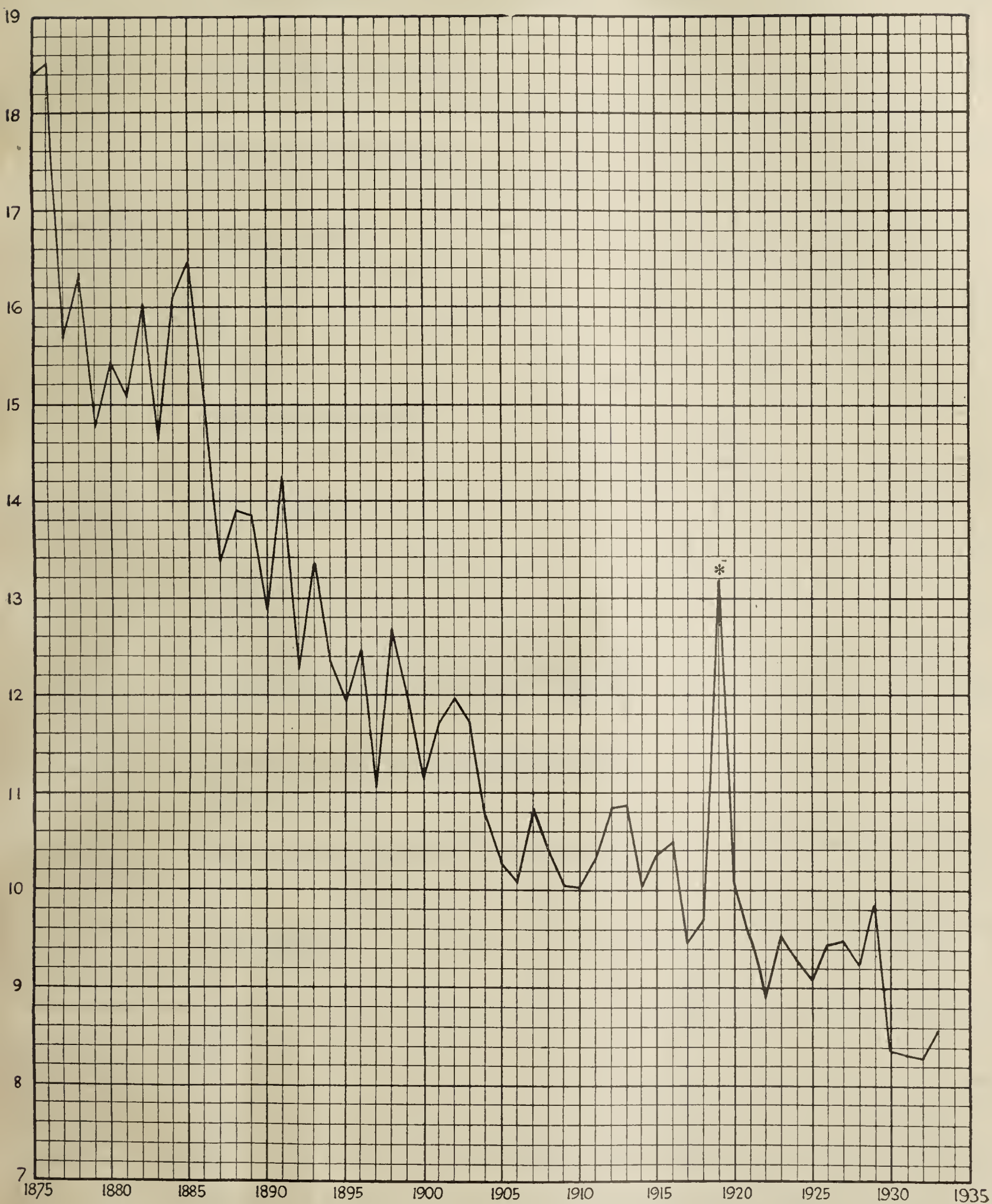
Causes of Death.	Number 1933.	Average Number 1928-32.	Increase (+) or Decrease (—) in 1929-33.	Causes of Death.	Number 1933.	Average Number 1928-32.	Increase (+) or Decrease (—) in 1929-33.
			per cent.				per cent.
Typhoid Fever	28	45	— 38	Diseases of the Arteries, Atheroma, etc....	1,022	952	+ 7
Measles	45	76	— 41	Other Diseases of the Circulatory System	30	69	— 57
Scarlet Fever.....	55	68	— 19	Bronchitis	341	398	— 14
Whooping Cough	25	150	— 83	Pneumonia	1,395	1,615	— 14
Diphtheria and Croup	169	184	— 8	Other Diseases of the Respiratory System	235	285	— 18
Influenza	308	275	+ 12	Diseases of the Stomach	144	134	+ 7
Plague .....	...	...	...	Diarrhoea and Enteritis (under 2 years)...	139	468	— 70
Erysipelas	25	37	— 32	Diarrhoea and Enteritis (2 years and over)	111	164	— 32
Infantile Paralysis	4	17	— 76	Appendicitis	212	212	0
Lethargic Encephalitis	15	22	— 32	Hernia, Intestinal Obstruction.....	195	208	— 6
Epidemic Cerebro-spinal Meningitis	5	9	— 45	Cirrhosis of the Liver.....	73	108	— 32
Other Epidemic Diseases	23	44	— 48	Other Diseases of the Digestive System...	376	391	— 4
Tuberculosis, Respiratory System	951	1,096	— 13	Bright's Disease (Acute and Chronic) ...	1,394	1,358	+ 3
Tuberculosis, Meninges and Nervous System	38	51	— 25	Other Genito-urinary Diseases	380	408	— 7
Other Tuberculosis Diseases	74	81	— 9	Puerperal Septicaemia	66	83	— 20
Cancer	2,620	2,444	+ 7	Other Puerperal Diseases	180	220	— 18
Diabetes	410	338	+ 21	Malformations	263	241	+ 9
Other General Diseases	492	531	— 7	Congenital Debility	86	172	— 50
Diseases of the Blood	242	220	+ 10	Premature Birth	640	802	— 20
Chronic Poisonings and Intoxications	27	45	— 40	Other Developmental Diseases	256	312	— 18
Meningitis	97	128	— 24	Senility	737	842	— 12
Cerebral Haemorrhage and Apoplexy	921	832	+ 11	Suicide	327	312	+ 5
Insanity	95	88	+ 8	Accident	1,067*	1,261	— 15
Convulsions of Infants	15	26	— 42	All other Causes	354	322	+ 10
Other Diseases of the Nervous System ...	598	611	— 2				
Diseases of the Heart	5,017	4,150	+ 21	Total	22,322	22,905	— 2·5

* Includes 321 motor accidents.

Epidemic Diseases.—The deaths from epidemic diseases numbered 702, as compared with a average of 900 during the previous five years, the rate decreased by 24 per cent. The deaths from scarlet fever numbered 55, an experience which was 19 per cent. less than the average rate of the previous five years.

Tuberculosis of the Respiratory System was the cause of 951 deaths in 1933, the rate 365 per million living, being 12 per cent. below the average rate of the previous five years. The deaths of males numbered 606 and of females 345, and the rates per million living were 459 and 269 respectively. The mortality rate from other tuberculous diseases was 16 per cent. below the average of the previous five years.

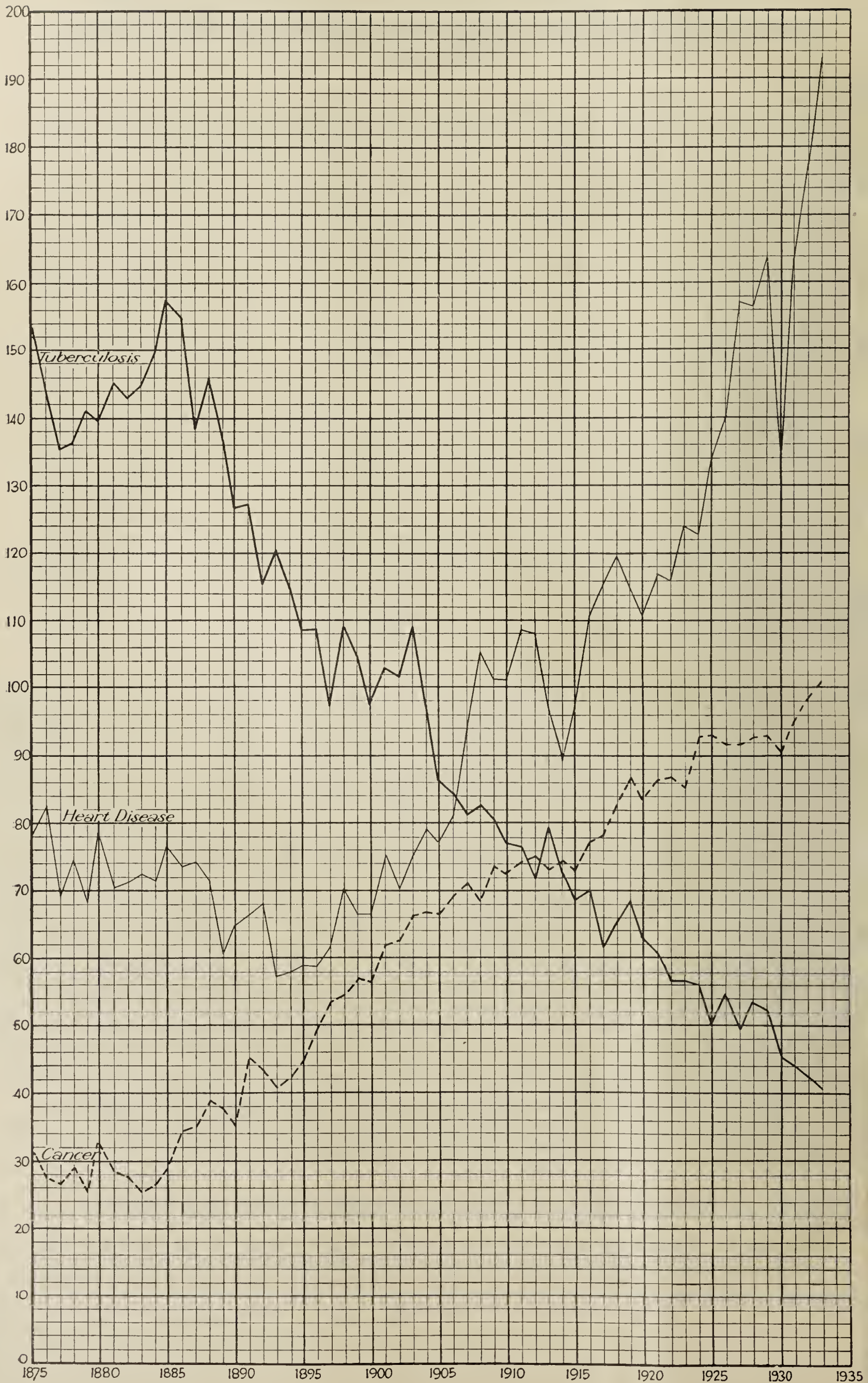
ANNUAL DEATH RATE PER 1,000 OF POPULATION IN NEW SOUTH WALES, 1875-1933.



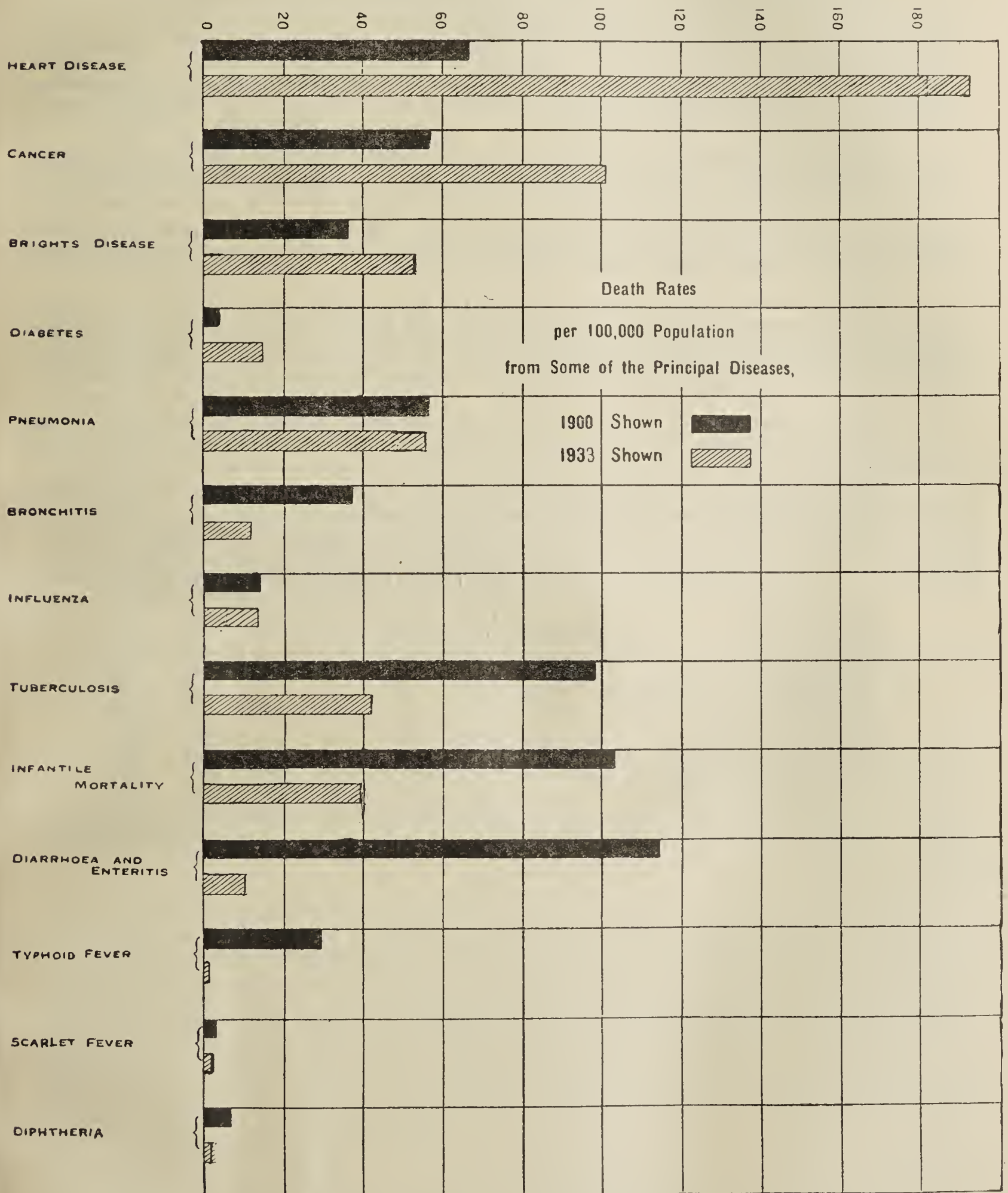
* 1919—Influenza Epidemic (deaths 6,387).

CANCER, TUBERCULOSIS, AND HEART DISEASE.

Annual Death Rate per 100,000 of the Population in New South Wales, 1875-1933.



DEPARTMENT OF PUBLIC HEALTH, NEW SOUTH WALES. DIAGRAM SHOWING THE DEATH RATES RECORDED FOR SOME OF THE PRINCIPAL DISEASES 1900-1933



Cancer.—The deaths from cancer numbered 2,620, equal to a rate of 1·007 per 1,000 living, and 7 per cent. above the average rate of the preceding quinquennial period. The deaths of males numbered 1,394 and of females 1,226, the rates for each sex being 1,057 and 956 per million respectively. The death-rate from this disease has been increasing steadily for a number of years.

Cerebral Hæmorrhage.—To cerebral hæmorrhage and apoplexy during 1933 were ascribed 921 deaths, of which 444 were those of males and 477 of females. The rate was 354 per million living, or 337 for males and 372 for females. The rate for 1933 is 11 per cent. higher than that for the previous quinquennium.

Diseases of the Heart were the cause of 5,017 deaths, the rate being 1,928 per million. The apparent increase in these deaths during the last twenty-five years is probably the result of the greater attention given to pathological diagnosis. Furthermore, in combination with other diseases, where precise information is lacking, diseases of the heart are given precedence over many other diseases. The rate for deaths from heart diseases in 1933 was 21 per cent. above the average rate of the preceding five years. Of the total deaths, 2,861 were of males and 2,156 females, the corresponding rates per million living of each sex being 2,168 and 1,681.

Bronchitis and Pneumonia.—Bronchitis with 341 deaths, equal to a rate of 131 per million living, showed a decrease of 15 per cent., and pneumonia, with 1,395 deaths or 536 per million, a decrease of 14 per cent. as compared with the experience of the previous five years.

Of the deaths from bronchitis, 201 were of males and 140 of females, or 152 and 109 per million living respectively. Of the persons who died from pneumonia, 802 were males and 593 were females, and the rates were 608 and 462 per million living of each sex.

Bright's Disease.—During 1933 there were 1,774 deaths due to diseases of the genito-urinary system, of which 1,394 were caused by acute nephritis and Bright's disease. The rate for nephritis (acute and chronic) was 536 per million living; for males 613 per million and for females 456 per million. In 1933 the rate was 3 per cent. more than the average of the previous five years. The general tendency of the rate has been to increase.

Diseases of Infants.—The principal causes were prematurity 640, other developmental diseases 552, diarrhoea and enteritis 99, pneumonia 183, whooping cough 12, bronchitis 30, measles 2, and convulsions 9.

The following statement shows the causes of deaths of children under 1 year of age per 1,000 births, during 1933, in comparison with the preceding five years :—

Causes of Death.	Males.		Females.		Total.	
	1933.	1928-32.	1933.	1928-32.	1933.	1928-32.
Epidemic Diseases	1·23	3·22	1·26	3·39	1·25	3·30
Tuberculous Diseases	·22	·29	·14	·32	·18	·31
Syphilis	·18	·31	·19	·26	·18	·29
Meningitis	·35	·54	·28	·36	·32	·45
Convulsions	·26	·36	·14	·38	·20	·37
Bronchitis	·74	·80	·61	·67	·68	·74
Pneumonia	4·61	5·44	3·64	4·47	4·14	4·97
Diarrhoea and Enteritis	2·81	7·63	1·63	5·96	2·24	6·82
Premature Birth	15·92	17·21	12·95	13·55	14·48	15·43
Other Developmental Diseases	14·12	15·53	10·75	11·40	12·50	13·52
Other Causes	3·47	3·86	2·90	2·88	3·18	3·38
All Causes	43·91	55·19	34·49	43·64	39·35	49·58

SECTION I.

A.—PUBLIC HEALTH ADMINISTRATION.

CHEMICAL LABORATORY.

REPORT OF THE GOVERNMENT ANALYST FOR THE YEAR ENDED
31st DECEMBER, 1933.

Staff.

<i>Government Analyst</i>	Sidney G. Walton, F.A.C.I.
<i>Second Government Analyst</i>	Harold B. Taylor, M.C., D.Sc., F.I.C., F.A.C.I.
<i>Senior Assistant Government Analyst</i>	Arthur D. Dibley, A.S.T.C., A.A.C.I.
<i>Assistant Government Analyst</i>	Robert G. O'Brien, A.S.T.C., A.A.C.I.
<i>Analysts</i>	Ernest S. Ogg, B.Sc., A.A.C.I. W. F. Fisher, A.S.T.C., A.A.C.I.

Five laboratory assistants; 1 laboratory attendant; 1 clerk (Grace McGlynn); 1 shorthand-writer and typist.

A total of 27,640 samples were received for examination in 1933, representing 25,318 samples examined in connection with the administration of the Pure Food Act, 1908, and 2,322 samples submitted in connection with the public services of the State. This is over 2,000 samples in excess of the number examined in any previous year.

PURE FOOD ACT.

Milk.—The total milks examined for the purposes of the Pure Food Act amounted to 20,682 representing 16,855 samples collected by Food Inspectors and Local Authorities in the metropolitan area, 2,767 samples collected in country districts, and 1,060 samples submitted by the Milk Board.

Of the total samples collected in the metropolitan area, 1·46 per cent. failed to conform to the legal standard; while 3·46 per cent. of the country milks and 6·03 per cent. of the milks submitted by the Milk Board were not in conformity with it. These adulterations are the lowest in proportion yet recorded, and evidence in a satisfactory manner the value of systematic and continuous inspection. The following are the details of the adulterations :—

Particulars of Milk Adulterations.

	Samples deficient in fat.		Samples containing added water.		Samples deficient in fat and containing added water.		Total.	
	No.	Proportion.	No.	Proportion.	No.	Proportion.	No.	Proportion.
		per cent.		per cent.		per cent.		per cent.
Collected in the Metropolitan Area	100	0·59	117	0·69	30	0·17	247	1·46
Collected in Country Districts	36	1·30	56	2·02	4	0·14	96	3·46
Submitted by Milk Board	46	4·33	11	1·03	7	0·66	64	6·03
Total	182	0·88	184	0·88	41	0·19	407	1·96

The cryoscopic method for the determination of added water in milk continues to give every satisfaction, prosecutions being undertaken in many cases where the solids-not-fat content was considerably in excess of the legal standard of 8·5 per cent. It is also satisfactory to observe that with the introduction of this method a marked improvement has taken place in the average percentage of solids-not-fat found in the milks submitted for analysis. This result is in agreement with the observations recorded in other countries where the freezing point is a legal standard. Towards the end of the year, an investigation was commenced on the Sydney milk supply to determine the composition of milk as it comes from the cow. It is intended to continue this investigation in order to cover a twelve months' period and compare the different seasonal results. Milk drawn from the various milk producing districts will be included in order that the results may be truly representative.

The samples other than milk submitted for analysis amounted to 4,636, including 4,556 samples of food and 80 samples of drugs.

Wholewheat Bread.—Regulation 11 (4) defines wholewheat bread as the porous substance obtained by baking dough made from whole-wheat flour to which not more than 20 parts per centum of flour may be added. The problem of ascertaining that a loaf has been prepared from a flour containing not less than 80 per cent. of whole-wheat flour is complicated by—

- (a) the changes which take place during the preparation of the dough and the baking of the bread, which make the identification of germ substances difficult if not impossible;
- (b) the disturbance in the normal relationship existing between the ash, phosphate, fat, etc., found in wholewheat flour, caused by the addition of salt, malt, milk and fatty substances, and "improvers" such as ammonium salts, phosphates, etc.

A further difficulty confronting both the analyst and the baker who desires to manufacture genuine whole-wheat bread is that whole-wheat flour supplied by the miller is usually a blended article which has been prepared by mixing various proportions of the different grades of bran, etc., with white flour. If the various substances are incorporated in the respective proportions in which they exist in whole wheat, the resulting flour would be equal to genuine stone-ground whole-meal, but very often this is not the case. Taking everything into consideration, it was considered that the percentage of crude fibre, calculated on the dry substance of a bread, would form the most reliable guide as to whether an alleged whole-wheat bread had been prepared from a whole-wheat flour as prescribed by the Regulation. If the fibre is present in the proper proportion, it may be assumed that the loaf has been prepared from the prescribed percentage of whole-wheat flour. If the fibre, however, is less, the proportion of whole-wheat present can only be equivalent to the amount of fibre found.

During the year an investigation was undertaken to determine how far the percentage of crude fibre obtained from various mixtures of wholemeal, flour, bran, pollard, etc., could be taken as indicating the composition of the flour from which the loaf had been prepared. The analysis of the various ingredients used for preparing the flours from which the loaves were made is as follows :—

Ingredient.	Moisture.	Ash.	P ₂ O ₅ .	Crude fibre (on dry substance).
	per cent.	per cent.	per cent.	per cent.
White flour	11.5	0.45	0.20	0.09
Stone-ground whole wheatmeal	9.0	1.40	0.75	2.38
Pollard	9.4	3.15	0.90	7.54
Fine bran	11.3	4.79	1.50	11.91
Ordinary bran	11.4	4.81	1.60	11.98
Coarse bran	11.5	5.06	2.00	12.40
Wheat germ	10.8	3.8	1.50	3.46

NOTE.—The crude fibre was determined by the A.O.A.C. method.

Using mixtures of the above, experimental batches of four loaves were baked through the courtesy of the Chemists' Branch, Department of Agriculture, Sydney, the analysis of which are as follow :—

Analyses made by R. G. O'Brien, A.S.T.C., A.A.C.I., and W. F. Fisher, A.S.T.C., A.A.C.I.

Flour used.	Average weight of loaf.	Average volume of loaf.	Average specific gravity.	Maximum moisture.	Crude Fibre. (In dried substance.)		Remarks.
					Obtained.	Calculated.	
	g.	ml.		per cent.	per cent.	per cent.	
White flour.....	177	630	0.28	42.7	0.12	0.09	Good texture.
Wholemeal, 100%	184	355	0.51	43.0	2.35	2.37	Heavy and doughy; not satisfactory for ordinary consumption.
Wholemeal, 1 part; white flour, 2 parts.....	178	511	0.34	42.7	0.90	0.85	Good texture.
Wholemeal, 2 parts; white flour, 1 part	181	452	0.40	43.1	1.60	1.61	Good texture.
Wholemeal, 80%; white flour, 20%	184	410	0.44	40.5	2.05	1.90	Fairly heavy texture.
Fine bran, 7%; white flour, 93%	181	500	0.36	42.5	1.00	0.92	Good texture.
Fine bran, 13%; white flour, 87%	182	447	0.40	41.6	1.77	1.63	Good texture.
Fine bran, 19%; white flour, 81%	184	391	0.47	40.5	2.40	2.26	Heavy and doughy; not satisfactory for ordinary consumption.
Coarse bran, 7%; white flour, 93%	183	558	0.32	41.4	1.12	0.95	Good texture.
Coarse bran, 13%; white flour, 87%	177	457	0.38	41.9	1.97	1.79	Crumbly loaf, not satisfactory for ordinary consumption.
Coarse bran, 19%; white flour, 81%	178	411	0.43	41.0	2.67	2.43	Heavy crumbly loaf; not satisfactory for ordinary consumption.
Ordinary bran, 7%; white flour, 93%	190	578	0.32	41.8	0.95	0.92	Good texture.
Ordinary bran, 13%; white flour, 87%	188	527	0.35	41.6	1.80	1.63	Good texture.
Ordinary bran, 19%; white flour, 81%	186	406	0.45	40.2	2.50	2.35	Heavy and doughy; not satisfactory for ordinary consumption.
Pollard, 10%; white flour, 90%	190	502	0.37	41.5	1.00	0.83	Slightly sticky texture, but no visible particles of bran.
Pollard, 20 %; white flour, 80%	191	472	0.40	42.2	1.95	1.65	Sticky texture; somewhat heavy; not satisfactory for ordinary consumption.
Pollard, 30%; white flour, 70%	194	405	0.47	42.0	2.62	2.32	Sticky and heavy texture; not satisfactory for ordinary consumption.

NOTE.—The crude fibre was determined by the A.O.A.C. method.

From the foregoing results it will be seen that the crude fibre content of 80 per cent. wholemeal bread was 1.9 per cent. (calculated on the dry substance). In the actual experiment 2.05 per cent. was obtained. In general, the crude fibre results obtained from the bread were somewhat higher than the results calculated on the actual composition of the various flours used. This might be partly accounted for by the difficulty of obtaining uniformity in mixing by hand small batches for baking.

From the analyses undertaken from time to time in the laboratory, the fibre content of wholemeal appears to be remarkably constant, and, judging from the results obtained, it does not fall below 2.2 per cent. (ealeulated on the dry substance).

The volume of the loaf under ordinary baking conditions seems to have a fairly definite relationship to the amount of fibre present, whether this fibre is in the form of bran, pollard, or wholemeal.

From the results of this investigation, it would appear desirable to incorporate a minimum fibre content in the regulation under the Pure Food Act governing wholewheat flour and wholewheat bread.

The Use of Flour Improvers.—Owing to the recurrence of dermatitis among bakers’ operatives, attention was again directed to the question of the use of persulphates as “improvers.” Investigation failed to disclose the addition of persulphate to the artieles now on the market as “yeast foods” and “improvers.” The outbreak of bakers’ dermatitis some years ago was definitely traced to the addition of persulphates to the flour improvers in use at that time. Investigation at the mills in the metropolitan area showed that in at least two cases persulphate was being added directly to the flour, the amount added being approximately 1 part of persulphate to 15,000 parts of flour. Two country cases of dermatitis were also traced to the addition to flour by the local millers of persulphates. In every ease action was taken to prevent the addition, and it is believed that the practiee now no longer prevails.

Treated Ham.—During the year an investigation was carried out in regard to the coating of hams and bacon with gelatine, and the subsequent hardening of the coat by dipping it momentarily into a fairly strong solution of formaldehyde. The appearance of the treated article was excellent. The coat, except where it came into contaet with the cut meat, was hard and glossy, and gave the article a much enhanced appearance. It was elaimed by the inventors of the process that during no stage of the process did the inside of the coating, or the ham itself, come into contact with the formaldehyde, which was taken up by the chemieal reaetion of the gelatine. It was further elaimed that the reaetion with the gelatine destroyed the toxie aldehyde grouping of the formaldehyde by virtue of its eondensation with the amino group of the gelatine. Before cooking, it was directed that the coating was to be stripped from the ham, and, due to its flexibility and non-adherent properties, this could be rapidly and easily done, leaving the ham to be cooked in its original condition.

As small amounts of formaldehyde are present in untreated ham, due to the smoking process, the results of the investigation may be of some interest, and are appended.

(Analysis by R. G. O’Brien, A.S.T.C., A.A.C.I.)

Nature of Sample.	Sample Taken from.	Formaldehyde parts per million.
Treated Ham, Raw	Hard gelatine coating covering rind.....	1,600
“ “	Soft gelatine coating covering meat. ...	1,400
“ “	Meat immediately beneath soft gelatine coating.	400
“ “	Rind immediately beneath hard gelatine coating.	575
“ “	Meat 1 inch from surface	12
Untreated bacon	Rind	16
“ “	Surface meat.	16
“ “	Meat 1 inch from surface	6
Cooked, treated ham (treated presumably after cooking).	Hard gelatine coating.....	1,600
“ “ “ ...	Meat immediately beneath hard gelatine coating.	250
“ “ “ ...	Meat 1 inch from surface	50
Gelatine preparation used before coating and before dipping in formaldehyde.	.....	None.

As a result of this investigation, ham and bacon treated by this process are deemed to contravene the provisions of the Pure Food Act, and the use of the process, therefore, is not permissible.

Tinned Salmon.—Owing to the practice prevalent in the trade of re-labelling second-class salmon (“Chum,” “Fancy Pink,” etc.), and re-packing it as first-grade quality (“Sockeye,” “Red Salmon,” etc.), the aid of the Canadian Government Trade Commissioner was enlisted in order to permit of regulations being framed to provide that each can of imported salmon should bear an embossed description of the species of salmon contained therein. The Commonwealth Government issued a regulation, taking effect in September, 1933, governing the marking of eanned salmon under the “Commeree Trades Description Aet.” The following grades are prescribed in the regulation in question :—

“Sockeye,” “Blueback,” “Spring,” “Cohoe,” “Pink,” “Chum,” “Steelhead.”

The use of the word “red” is prohibited in the trade description of “Pink,” “Chum,” and “Steelhead” canned salmon.

Examination was made of the various brands of canned salmon on the market in this State, in order to ascertain if the regulation was being eomplied with. In the case of “red” salmon, examination was made partieularly for the presence of artificial colouring matter, none being found in any instance.

Tomato Products.—In some of the tomato products examined, the mould, yeast and baeteria counts were found to be unduly high. It is intended in the near future to investigate the quality of tomato products generally, with a view to the recommendation of bacterial standards for incorporation in the standard under the Pure Food Act.

Contraceptives.—A fairly representative range of contraceptives on the local market were submitted for examination during the year, the following being the substances found :—

Chlorine compounds (Chloramine T. and Hypochlorite), quinine hydrochloride, quinine sulphate, boracic acid, lactic acid, paraformaldehyde, tartaric acid, sodium bicarbonate, saponin, pectic substances, fillers (clay, etc.).

The articles investigated included effervescing tablets, cocoa butter pessaries, and jelly substances in collapsible tubes.

Particulars of Adulterations.—A total of 798 (17·5 per cent.) of the food samples submitted, other than milk, contravened the provisions of the Act, while 13·7 per cent. of the drugs did not conform to standard. The following table gives the details of adulteration :—

Nature of Sample.	No.	Particulars of Adulteration.
<i>Food and Milk Samples.</i>		
Baking Powder	1	Deficient in carbon dioxide.
Whole-wheat Bread	15	Deficient in whole wheat flour.
Pumping Brine	6	Contained considerable amounts of impurity.
Cherries, Maraschino	1	Illegally preservatised.
„ „	1	Illegally preservatised and flavoured.
Cider	1	Contained less than 1 per cent. apple juice.
Colouring (for Fish)	1	Aniline dye (annatto only permitted).
Confectionery	1	Contained an excess of alcohol.
„	1	Contained proportion of finely-divided metal (chiefly iron) derived in manu- facture.
Concentrated Cordials	3	Deficient in fruit juice when diluted.
Cordials	1	Deficient in fruit juice.
„	2	Deficient in fruit juice and coloured.
„	7	Artificially coloured and not labelled.
„	3	Illegally preservatised and coloured.
„	6	Illegally preservatised.
„	1	Contained excess of permitted preservative.
„	9	Contained saccharin.
Cream	4	Deficient in fat.
„	4	Contained hydrogen peroxide and viscogen.
Custard Powder	1	Artificially coloured and flavoured, and not so labelled.
Diabetic Food	1	Labelled “ non-starchy ”; contained 23 per cent. of starch.
Essence, Lemon	7	Deficient in oil of lemon.
„ Imitation Lemon	4	Deficient in citral in amounts ranging from 30 to 87 per cent.
„ Vanilla	3	Imitation essences.
Fish, Soft-cured	2	Coloured with an aniline dye.
Flour	7	Contained persulphates (prohibited yeast accelerator).
Flour, Self-raising	13	Deficient in carbon dioxide.
Fruit, Fresh	2	Contained excess arsenic and lead.
Ham	9	Contained formaldehyde.
Ice Cream	6	Deficient in fat.
„	2	Contained starch, derived from use of an ice cream “ stabiliser.”
Jam	4	Contained considerable proportions of apple.
Meat	222	Illegally preservatised.
Minced Meat	251	„ „
Tripe	14	„ „
Sausages	146	Contained excess of permitted preservative.
„	2	Contained excess starch.
Smallgoods	7	„ „
Meat Paste	10	Deteriorated and unfit for consumption.
Milk	182	Deficient in fat.
„	184	Contained added water.
„	41	Deficient in fat and contained added water.
Olive oil	2	Contained approximately 33 per cent. mineral oil.
Pickles	2	Contained excess sulphur dioxide.
„	3	Contained saccharin.
Spirits	2	Contained excess water.
Tobacco Leaf	1	Contained 1·2 grains of arsenate of lead per lb.
Tobacco Plug	2	Contained 0·13 and 0·05 grain per lb., respectively, of arsenate of lead.
Tomato Sauce	1	Deficient in non-sugar organic tomato solids.
„ „	1	Illegally coloured with an aniline dye.
Vinegar	1	Deficient in acetic acid.
Wine	1	Contained approximately 15 per cent. cane sugar.
„	1	Artificially flavoured.
<i>Drugs.</i>		
Cinnamon Oil	3	Specific gravity higher than Pharmacopoeial requirements.
Hydrogen Peroxide	2	Deficient in available oxygen.
Iodine, Weak Tincture	1	Deficient in iodine.
Rouge	3	Contained lead (derived from colouring matter used).
Laxative Tablets	2	Declared to be equivalent to an apple a day. The amount of apple present (if any) was negligible, phenolphthalein being the effective principle present.
	1,216	

Samples submitted for the Public Services of the State totalled 2,322, as under :—

Subsidised Institutions submitted 293 samples, including foods, drugs, human milk, vomit and viscera for examination as to the presence of poisons, etc.

Government Stores Department—857 samples, including disinfectants, drugs, foods, lubricants, paints, etc. These samples were submitted in connection with the formulation of specifications for the articles required, and the control of supplies made under contract.

Pharmacy Board.—Eleven samples for examination in connection with the administration of the Poisons Act.

Police Authorities.—337 exhibits in connection with criminal investigations, 12 exhibits *re* the administration of the Dangerous Drugs Act, and 6 exhibits of animal viscera.

The following are the details of the charges relating to the criminal investigations :—

Re uncertified deaths	...	...	...	...	...	...	...	...	209 exhibits.
Attempted murder	...	...	...	...	...	...	...	...	7 „
Suspected administration of poison	...	...	...	...	...	...	...	...	27 „
Indecent assault	...	...	...	...	...	...	...	...	3 „
Indecent behaviour	...	...	...	...	...	...	...	...	4 „
Administration of abortifacients	...	...	...	...	...	...	...	...	7 „
Robbery	...	...	...	...	...	...	...	...	13 „
False pretences	...	...	...	...	...	...	...	...	8 „
Counterfeit coining	...	...	...	...	...	...	...	...	26 „
Animal poisoning (exclusive of viscera)	...	...	...	...	...	...	...	...	10 „
Arson	...	...	...	...	...	...	...	...	10 „
Sly grog selling	...	...	...	...	...	...	...	...	2 „
Malicious damage to property	...	...	...	...	...	...	...	...	2 „
Miscellaneous	...	...	...	...	...	...	...	...	9 „
									<hr/> 337 exhibits.

Twelve exhibits (opium 11, cocaine 1) were submitted in connection with the administration of the Dangerous Drugs Act.

Six exhibits of animal viscera were received, arsenic being found in 2 cases, phosphorus in 1, and the chemical examination yielding negative results in 3 cases.

Human Viscera.—Coroners forwarded 83 exhibits of human viscera, and 5 exhibits of blood for examination in connection with cases of uncertified deaths. One case of particular interest investigated during the year was that in which death was due to luminal (phenylethylbarbituric acid) poisoning. Luminal was detected in the urine and in the organs. This is of interest in so far as it is not in accordance with the statement made by Autenreith-Warren in “Detection of Poisons,” 1928, pp. 353–4, that luminal undergoes decomposition in the organs and cannot be detected as such in either the urine or in the organs.

Chemical examination of the viscera submitted yielded negative results in 50 cases. In 38 cases (including 5 exhibits of blood), death was attributed to the following :—

Arsenic	...	...	...	...	...	...	...	...	...	...	7 cases.
Atropine	...	...	...	...	...	...	...	...	...	...	1 „
Carbon monoxide	...	...	...	...	...	...	...	...	...	...	3 „
Cyanide	...	...	...	...	...	...	...	...	...	...	9 „
Belladonna	...	...	...	...	...	...	...	...	...	...	1 „
Drowning	...	...	...	...	...	...	...	...	...	...	2 „
Luminal	...	...	...	...	...	...	...	...	...	...	1 „
Nicotine	...	...	...	...	...	...	...	...	...	...	1 „
Nitrite	...	...	...	...	...	...	...	...	...	...	1 „
Strychnine	...	...	...	...	...	...	...	...	...	...	11 „
Veronal	...	...	...	...	...	...	...	...	...	...	1 „
											38 cases.

Water and Sewerage.—Departmental and municipal authorities submitted 352 samples in connection with the supervision of country water supplies, the control of swimming pools, etc., and 65 samples for the control of sewerage, sewage installations, and the discharge of drainage and wastes into public places.

Industrial Hygiene.—Industrial hygiene authorities submitted 150 specimens consisting largely of exhibits requiring examination in connection with claims under the Workmen’s Compensation Act and the diagnosis of illness due to occupational causes. A considerable amount of further investigational work has been carried out in connection with silicosis. This investigation, which is undertaken in conjunction with the Division of Industrial Hygiene, entails the chemical examination of lungs in order to determine the composition of the mineral matters contained therein. The examination of rocks and dust are also carried out in this connection.

The usual routine examination of urine, faeces, etc., for the presence of lead has been continued in connection with the incidence of lead poisoning, the results obtained supporting conclusions arrived at in previous years.

Hair, nails, urine, etc., have been examined for the presence of arsenic in connection with occupational disease, and an investigation has been carried out in conjunction with the Coast Hospital in regard to the elimination of arsenic by patients treated with known dosages of organic arsenical compounds.

Miscellaneous Authorities.—A total of 151 samples were received from miscellaneous authorities, including embalming fluid, flock and bedding materials, exhibits for examination as to the presence of poisons, vermicides, etc.

General Remarks.—It gives me much pleasure to report that towards the end of the year a considerable sum of money was made available for the purchase of much needed modern equipment. Arrangements have been made to secure the apparatus, which will be installed during 1934. The work of the Laboratory has been seriously handicapped for some years by the lack of modern instruments, and it is hoped that in future adequate periodical allotment of money will be made available for this purpose.

The most pressing need at the moment is the provision of increased accommodation. At the present time the staff is working under most crowded and difficult conditions. It would seem from the increase in the number of samples examined annually and the more specialised demands of modern analytical practice that much enlarged space will have to be provided in the immediate future if the chemical laboratory is to function in a satisfactory manner.

Tables are appended giving particulars of the whole of the samples examined.

S. G. WALTON,
Government Analyst.

TABLE I.—Samples examined during the year 1933, for the purposes of the Pure Food Act, 1908.

Nature of Sample.	Samples.		Nature of Sample.	Samples.	
	Number examined.	Number adulterated or falsely described		Number examined.	Number adulterated or falsely described
Acetylsalicylic acid tablets	2	0	Hydrogen peroxide.....	10	2
A.P.C. powders	1	0	Ice cream	71	8
Arsenic	2	0	Icing sugar	2	0
Bacon	10	9	Iodine tincture	2	1
Baking powder	3	1	Jam	22	4
Beans	1	0	Jelly crystals	15	0
Beer	51	0	Lotion	1	0
Biscuits	1	0	Margarine.....	3	0
Bread	32	15	Meat—fresh	658	222
Breakfast food	1	0	„ tripe	257	14
Brine.....	7	6	„ minced meat	699	251
Brine cure	3	0	„ sausages	1,930	148
Butter	28	0	„ smallgoods	114	7
Castor oil	2	0	„ pastes	10	10
Cheese	13	0	Medicine	9	0
Cherries (Maraschino)	4	2	Milk—re standard*.....	13,683	213
Cider	1	1	„ „	3,172	34
Cinnamon oil	3	3	„ „	804	43
Cleanser (for food containers)	1	0	„ „	1,963	53
Cocoa	7	0	„ „	1,060	64
Coffee	5	0	„ re odour	2	0
Coffee and chicory essence	19	0	„ condensed.....	8	0
Colouring (for fish)	1	1	„ malted	1	0
Confectionery	5	2	Olive oil	37	2
Contraceptives	13	0	Paint.....	9	0
Cordials, etc.	57	32	Pepper	22	0
Cough syrup	1	0	Pickles	27	5
Cream	104	18	Pills	11	2
Custard powder	1	1	Powder, medicinal	1	0
Diabetic foods	5	1	Radium sparklets	1	0
Disinfectants	6	0	Radox (bath salts)	1	0
Dripping	2	0	Rouge	4	3
Egg pulp	4	0	Salad dressing	3	0
Essences (flavouring)	32	14	Sodium nitrate	1	0
Eucalyptus oil	1	0	Spirits	16	2
Fat (used in margarine manufacture)	1	0	Sodium perborate	1	0
Fish—tinned	13	0	Tobacco leaf and plug	7	3
„ smoked	17	2	Tomato sauce	10	2
„ fresh	44	0	Tooth paste	1	0
„ paste	7	0	Vinegar.....	33	1
Flour.....	40	7	Wine	19	2
„ self-raising.....	23	13	Woodsmoke	1	0
Friars balsam	6	0	Yeast foods	8	0
Fruit, re spray	22	2	Vegetables	2	0
Hair preparations	2	0			
Honey	3	0		25,318	1,216

* Milk samples submitted :—Metropolitan district Departmental Inspectors 13,683
Country districts Municipal and Shire Inspectors 3,172
Milk Board Inspectors Departmental Inspectors 804
All samples other than Milk were submitted by Departmental Inspectors. Municipal and Shire Inspectors 1,963
= 20,682

TABLE II.—Samples examined during the year 1933, for the Public Services of the State.

Nature of Sample.		Number of Samples.	Nature of Sample.		Number of Samples.
(a)	Atropine sulphate tablets	1	(b)	Cleanser powder	1
	Baking powder	5		Cleanser paste.....	4
	Bread	15		Cotton wool	3
	Sausages and minced meat	51		Disinfectants	162
	Milk—re standard	138		Glycerine and borax	1
	„ for infant feeding	1		Ice cream	1
	„ human	60		Ink and ink powder	51
	„ condensed.....	3		Lemonade and ginger beer	6
	Morphine hydrochloride solution	1		Lubricants	219
	Oatmeal	8		Oatmeal	1
	Pills	4		Paint materials	5
	Stomach lavage	3		Paraffin, liquid	1
	Vomit	2		Polish, floor.....	1
(b)	Human viscera	1		Roofing, bituminous	4
	Acetylsalicylic acid tablets	1		Sauce	3
	A.P.C. tablets	1		Silver protein	1
	Antiphlogistine substitutes	2		Silver vitellinate.....	1
	Bacon	1		Silvol	1
	Barium sulphate	5		Soap	236
	Blue, laundry	4		Sodium chloride	1
	Camphor liniment	1		Solder	11
	Cascara tablets	1		Stockholm tar.....	1
	Chicory	84		Tomato sauce	1
	Chloroform	2		Turpentine	2

Submitted by (a) Subsidised Institutions; (b) Government Stores Department.

TABLE II.—Samples examined during the year 1933, for the Public Service of the State—*continued*.

Nature of Sample.		Number of Samples.	Nature of Sample.		Number of Samples.
(b)	{ Water, distilled	1	{ Alum..		3
	{ Waterproof cloth, sheeting, etc.	32			1
	{ Wood preserving oil	4			19
(c)	{ Chlorodyne	1	{ Embalming fluid		4
	{ Glycerine and linseed compound	7			2
	{ Femmetone	1			79
(d)	{ Lysol.....	1	{ Flock and bedding materials		11
	{ Phenol	1			1
	{ Criminal investigations	349			2
(e)	{ Human viscera	88	{ Medicines		2
	{ Animal viscera	6			2
	{ Water	352	{ Pills		5
(f)	{ Drainage and effluents	65			2
	{ Antiseptic	1			5
	{ Flour.....	5	{ Prickly pear poison		1
(g)	{ Flour improver	1			3
	{ Gas mask.....	1			1
	{ Glaze.....	9	{ Powders, medicinal		3
(f)	{ Human hair	13			1
	{ Human nails	6			1
	{ Mineral wool	1	{ Rubber solution		2
(f)	{ Post mortem specimens (human)	8			2
	{ " " (animal)	8			1
	{ Powder used in manufacture of gramophone needles		{ Water, distilled		1
(f)	{ Urine	96			1
			Total		2,322

Submitted by (b) Government Stores Department; (c) Pharmacy Board; (d) Police Department; (e) Municipal and Departmental officers; (f) Industrial Hygiene officers ; (g) Miscellaneous bodies.

PURE FOOD ACT, 1908.

REPORT OF THE CHIEF INSPECTOR ON THE GENERAL ADMINISTRATION OF THE PURE FOOD ACT, 1908, FOR THE YEAR ENDED 31ST DECEMBER, 1933.

Staff.

Chief Inspector, CHARLES V. FRANCIS, M.R. San. I. Senior Inspector, G. A. GRIFFIN. 10 Metropolitan Inspectors. 2 Country Inspectors and 1 Assistant.

I have to submit the following report on the work of the Branch for the year 1933.

Milk.—During the year, 14,146 samples of milk were taken and submitted for analysis. 234 of these were found to be below the standard. Warnings were issued in 64 cases; prosecutions numbered 167; fines and costs totalled £562.

Cream.—109 samples were taken for analysis. There were two prosecutions, fines and costs totalling £7 16s.

Meat.—The use by butchers of the prohibited preservative substance, sulphurous acid, still continues to a considerable extent. The department, in its effort to lessen this type of offence, instituted towards the latter part of the year a more vigorous campaign. 3,697 samples of meat were taken for analysis. 121 warnings were issued, and 372 prosecutions were instituted. Fines and costs amounted to £787 5s.

Bread.—31 samples of bread were taken for analysis. Most of these were purchased as “whole-meal” or “wheat-meal” bread, and many of them were found not in accordance with the standard, inasmuch as they contained an excess of ordinary flour. Nine warnings were issued, and three prosecutions resulted in convictions. Fines and costs amounted to £2 9s.

Legal proceedings were also taken in a number of cases for failure to protect bread during delivery by means of proper covering, and convictions resulted.

Beer.—49 samples were taken during the year, all of which were in accordance with the standard. No preservatives were found.

Butter.—28 samples of butter were examined—all found satisfactory.

Cordials and Summer Drinks.—84 samples were submitted for analysis. It was found necessary to issue warnings in 22 instances, of which several were for inaccurate statements on labels. Three prosecutions were undertaken and resulted in £5 17s. in fines and costs.

Drugs.—69 samples were taken. One prosecution resulted, a fine, with costs, being imposed.

Essences.—33 samples were submitted for analysis. Three warnings were issued, and there were seven prosecutions with fines and costs amounting to £17 6s.

Flour (self-raising).—Some traders were selling an article much below the requirements of the regulations. 62 samples were obtained for analysis; three warnings were issued, and nine prosecutions were undertaken, resulting in fines and costs totalling £19 8s.

Ice Cream.—Of 69 samples taken, only three were found below the standard. Convictions were responsible for fines and costs amounting to £6 14s.

Food and Drugs Samples in General.—Of a total of 4,638 samples (excluding milk) of food and drugs submitted for analysis, 576 were found below standard. 166 warnings were issued, and 410 prosecutions were instituted. Fines and costs imposed amounted to £871 14s.

Seizure and Condemnation of Unsound Food.—The amount of deteriorated food seized and destroyed comprised nearly 19,000 packages (including sacks, casks and tins) and about 16 tons of other material. Thus, much food which would probably have been used for human consumption was prevented from being sold to the public.

Premises, Plant, Utensils, etc.—9,571 premises, together with the equipment thereon, were inspected. Notices were issued in 538 instances, calling upon traders to carry out improvements. Prosecutions were instituted in 12 instances, and fines and costs amounting to £47 10s. were imposed.

For general breaches of the Act and Regulations, legal proceedings were instituted in 32 instances. In this connection fines and costs amounting to £65 2s. were imposed.

Tables are attached showing the details of seizures, samples taken, inspections made, etc., over the period referred to.

C. V. FRANCIS,
Chief Food Inspector.

TABLE I.—Summary of Work performed by Pure Food Officers for the year ended 31st December, 1933.

Analysis of Samples of Milk.	Samples taken by--		
	Departmental Officers.	Municipal and Shire Council Inspectors.	Total.
Number of samples taken from all parts of the State	14,146	5,218	19,364
Number of samples below standard ...	234	80	314
Number of warnings	64	20	84
Number of prosecutions	167	60	227
	£ s. d.	£ s. d.	£ s. d.
Amount of fines and costs.....	562 0 0	193 10 0	755 10 0

*Foods and Drugs, other than Milk.** (See Table I, p. 14.)

Number of samples taken from all parts of the State	4,638
Number of samples below standard	576
Number of warnings	166
Number of prosecutions	410
Amount of fines and costs	£871 14s.

* Local authorities (municipal and shire councils) do not, as a matter of routine, collect samples of foods and drugs other than milk.

Food unfit for Consumption, Seized and Destroyed.

The seizures comprised over 16 tons of foodstuffs, and 18,734 packages of assorted foods.

Number of prosecutions	1
Amount of fines and costs	£3 8s.

Inspection of Premises used for Preparation, Sale, or Storage of Food.

Number of premises inspected in all parts of the State	9,571
Number of notices issued	538
Number of prosecutions	12
Amount of fines and costs	£47 10s.

TABLE 2—Summary of Legal Proceedings for Breaches of the Pure Food Act and Regulations, 1933.

	Prosecutions.	Fines and Costs.		
		£	s.	d.
Adulterated milk	167	562	0	0
Adulterated foods and drugs	410	871	14	0
Food unfit for human consumption seized and destroyed	1	3	8	0
Unclean premises	12	47	10	0
General breaches of Act and Regulations	32	65	2	0
Breaches of Venereal Diseases Act and Regulations	2	20	16	0
Grand Total	624	£1,570	10	0

TABLE 3.—Summary of work carried out under the Pure Food Act, 1908, from the date of its operation (October, 1910) to 31st December, 1933.

	Total No.	Total below standard.	Prosecutions undertaken.	Amount of Fines and Costs.		
				£	s.	d.
No. of milk samples	174,594	7,974	4,100	20,225	5	0
No. of food and drug samples	32,711	5,817	3,471	10,941	14	0
Premises inspected	188,657	.....	2,307	11,755	18	0
General breaches of Act	1,939	.....	1,568	5,286	5	0
Total	397,901	13,791	11,446	48,209	2	0

REPORT OF THE CHIEF SANITARY INSPECTOR FOR THE YEAR ENDED 31ST DECEMBER, 1933.

Staff.—Chief Sanitary Inspector, T. A. W. Curry, M.R.San.Inst.; 1 Senior Sanitary Inspector, 7 other certificated inspectors, and 1 certificated inspector and licensed surveyor.

Transfers and Appointments.—During the year Inspector G. A. Garrow was appointed acting Senior Sanitary Inspector and transferred from the Hunter River Combined Sanitary District to the Head Office; Inspector J. C. Meddows was transferred to the Hunter River Combined Districts.

ROUTINE AND GENERAL.

Inspection of Country Towns.—Primary inspections were made of 13 country towns and villages, and reports forwarded to local authorities indicating necessary improvements, and re-inspections were made of 43 towns and villages with the object of ascertaining what action had been taken by the respective local authorities to give effect to recommendations previously forwarded by the department.

Three outbreaks of infectious disease were investigated and recommendations made in regard to preventive measures.

Sanitary and Garbage Depot Sites.—A total of 126 sanitary and garbage depots and 19 proposed sites were inspected and reported on. Approval was given by the Board of Health to recommendations for disposal of nightsoil in ploughed furrows in lieu of trenches in three areas.

Insanitary Buildings.—47 insanitary buildings were inspected, and in twenty instances the conditions were such as to render the premises unfit for human habitation or occupation. Closing order certificates were issued in these cases, and the local authorities were recommended to take action to close the buildings. In other cases necessary improvements were recommended to place the buildings in a habitable condition.

General Inspections and Investigations comprised :—

Septic tanks, sites, etc.	391
Sewage treatment works	5
Garbage incinerators	7
Pollution of bathing beaches	6
Unemployed and other camps	16
Saleyards	4
Mosquito breeding areas	75
Funeral parlours	10
Noxious trades	622
Bedding factories	76
Recreation grounds	37
Cemeteries	5
Food premises, including butchers' shops	153
Barbers' shops	105
Public hospitals	17
Private hospitals	52
Public and private schools	41
Hotels	158
Swimming pools	48
Rat and vermin infestation	12

Inspections were made of 6 public and private water supplies, and 10 probable sources of pollution of watercourses were investigated; 117 water samples were collected and submitted for chemical or microbiological examination; 36 samples of sewage and 100 samples of water from swimming pools were also collected and submitted for analysis.

Manufacture of Flock for Bedding, etc.—Considerable attention has been given to this matter to ensure that no dirty rags, or rags collected from garbage tips are used in the manufacture of flock for bedding, upholstered furniture, etc.

With the object of ascertaining that the regulations respecting rags, flock and bedding were being complied with, a number of samples were collected and submitted to the Government Analyst for examination, viz. :—flock, 77; rags, 22; bedding material 20. The results generally have been satisfactory, but in three cases legal proceedings were instituted against manufacturers on charges of using unclean flock. In one case a fine of £1 plus 8s. costs was imposed, while in another the fine was £2 plus 8s. costs. In the third case the magistrate found the charge proved, but in view of the flock used being in the same condition as when purchased from the manufacturer, he applied section 556 of the Crimes Act and decided not to record a conviction on condition that the defendants entered into a recognisance. These prosecutions have led to the exercise of more care over the materials used in the manufacture of flock.

Officers of this Branch have collaborated with the Department of Labour and Industry in the administration of the regulations dealing with the branding of bedding, etc. Amended draft regulations are under consideration for the better control of materials used in the manufacture of bedding.

Many of the Health Inspectors of the various Councils are rendering valuable assistance in preventing rags being picked from garbage tips in their respective areas.

Supervision of Abattoir and Meat Works Wastes.—35 inspections were made of the State Abattoirs and the Sydney Meat Preserving Company's Works.

Slaughtering Premises.—232 premises registered under the Cattle Slaughtering and Diseased Animals and Meat Act were inspected and action taken to have necessary improvements effected. In several cases legal proceedings were instituted against the licensee for failing to maintain his premises and tools of trade in a clean condition.

Considerable attention has been given to the establishment of a better system of meat inspection within several of the more populous country districts. Investigations were made in the municipal districts of North Illawarra, Central Illawarra, Katoomba, Bathurst, Tamworth, Gunnedah, and the shires of Kearsley, Tarro, Peel, Cockburn, Abercrombie, Turon and Canobolas.

Recent amendments to section 15 of the Cattle Slaughtering and Diseased Animals and Meat Act, 1902, enables local authorities to obtain sufficient revenue from increased slaughtering fees to allow for the appointment of certificated meat inspectors in their districts.

In the municipalities of Central Illawarra, North Illawarra, Katoomba, and Tarro and Kearsley Shires advantage has been taken of these extended powers. Other Councils, including Peel, Cockburn and Tamworth, have the matter under consideration.

Theatres and Public Halls.—78 inspections of theatres and public halls were made and reports and recommendations forwarded to the Chief Secretary's Department. Two plans of proposed new buildings were examined and reported on.

Land Notified as Unfit for Building Purposes.—General survey work proceeded throughout the year. Nine large areas at Woy Woy were inspected and duly notified under section 55 of the Public Health Act, 1902. One area at Bankstown, 3 large areas at Woronora and 2 in the Municipality of Shellharbour were also notified. Many routine inspections were made and a number of allotments brought to a condition which rendered them suitable for building purposes.

Ordinances.—Several Local Government Act Ordinances have been amended, among which were Ordinances 39, 70 and 71 providing better control over the installation of gas heaters in bathrooms, Ordinance 41 (mosquitoes) was extended to additional areas, and Ordinances 45 (water supplies) and 46 (sewerage) were also amended.

Public Health (Amendment) Act, 1921.—A regulation relating to the qualifications of Health Inspectors employed by Municipal and Shire Councils was made under the provisions of this Act, and published in *Government Gazette* No. 58 of 13th April, 1933, and amendment to clause (b) of that Regulation was published in *Government Gazette* No. 141 of 8th September, 1933.

The object of the regulations is to bring about the appointment of certificated health inspectors.

Health Week Window Display.—This branch contributed a display of exhibits relating to personal and public hygiene during Health Week. Members of the public appeared to take much interest in the display.

Routine Destruction of Rats.—Systematic destruction of rats by means of traps and poison has been carried out by departmental rat catchers along the harbour front from Woolloomooloo Bay to Blackwattle Bay. A total of 4,032 rats was caught by the rat catchers employed by the Department, Sydney Harbour Trust and City Council. Those rats were examined in the Microbiological Laboratory and found free from plague.

Prosecutions.—Prosecutions instituted by officers of this branch for breaches of various Health Acts, Regulations and Local Government Act Ordinances resulted in the collection of £189 12s. 9d. in fines and costs.

In ten cases officers attended to give evidence before the Licensing and other Courts.

T. A. CURRY,
Chief Sanitary Inspector.

PRIVATE HOSPITALS ACT, 1908.

REPORT on the Operations of the Act for the year ended 31st December, 1933, by T. LEWIS-DUNN, M.B., B.S. (Adelaide), D.P.H., D.T.M. & H. (Sydney), Assistant Medical Officer of Health.

At 31st December, 1933, private hospitals licensed under the above Act numbered 705 (a decrease of 1 compared with the total for the year 1932) with a total of 6,004 beds (a decrease of 19 compared with the total at the end of the previous year).

Of the 705 licensed hospitals, 269, containing 3,191 beds, are located in the metropolitan area, and the remaining 436, with a total of 2,813 beds, are situated in country districts.

The number of private hospitals in the metropolitan area diminished during the year by 22, with a decrease of 74 beds, whilst in the country there was an increase of 21 hospitals and 199 beds.

The increase in the number of private hospitals noted during 1932 (45) has not been sustained during 1933. The added numbers in 1932 were probably due to present economic conditions, as the licensees of new premises in many instances were married nurses whose husbands were out of work. A number of the ventures apparently were not a financial success, as the licenses were surrendered in 1933.

Inspection of Private Hospitals.—The departmental supervisory nurses have systematically carried out re-inspections of hospitals, and the result has been a further improvement in the general standard of these premises.

Community Activities in connection with Private Hospitals.—During the year considerable additions were made to the Kuring-gai Community Service Hospital at Chatswood.

The Bush Nursing Association and the Country Women's Association of New South Wales continue to do splendid work in maintaining hospitals in the more remote and isolated parts of the State where there is no inducement to establish a private hospital under ordinary conditions. Hospitals under the auspices of the Bush Nursing Association are licensed at Bellata, Bonalbo, Dalgety, Ebor, Erigolia, Finlay, Ivanhoe, Jindabyne, Kentucky, Nimmitabel, Pilliga, Reid's Flat, Tabulum, Tarcutta, Tumbarumba, and Urbenville.

The Country Women's Association is responsible for licensed hospitals at Barellan, Carinda, Eugowra, Gulargambone, Hillston, Quandialla, Tallimba, Tottenham, Ungarie, and Yenda.

Exemptions.—There were no hospitals holding an exemption in 1933.

Rest Homes.—These premises are also inspected from time to time by the supervisory nurses. During the year there were a number of adverse reports concerning "Rest Homes," and in two instances the Board of Health required the keepers of such homes to apply for a license under the Private Hospitals Act, 1908.

Many of the "rest homes" catering for aged and infirm poor people and pensioners leave much to be desired. There is often a tendency to overcrowding and its attendant unsatisfactory conditions. The inmates are often not entirely responsible for their actions and not wanted by relatives, who may have no interest in their welfare, consequently, such inmates tend to be neglected by the keepers of such homes and would often be better off as inmates of an Institution. Inquiries were made as to whether some of these premises might be placed in the category of "common lodging houses."

Sepsis connected with Pregnancy in Private Hospitals.—Fifty-nine cases were notified during 1933, compared with 66 in 1932, and were for the most part single isolated cases of infection.

Private Hospital Premises.—The large, old-fashioned premises often chosen for conversion to private hospitals leave much to be desired. Such buildings can rarely be made to conform satisfactorily to the standards set for ventilation, lighting, and plumbing without undue expense, and are inconvenient generally when judged by modern standards.

In an endeavour to raise the standard of private hospital premises generally, it is required that premises not previously licensed must conform as far as possible to the requirements of the building section of the Local Government Act, 1919, and Ordinances, before license is recommended. In the case of premises already licensed the procedure is more difficult. To make these premises satisfactory in every respect is at present beyond the financial resources of many licensees, but where definitely unsatisfactory conditions exist, such as a combination laundry and kitchen, or defective ventilation in wards, licensees have been required to rectify same.

Licensing of Private Hospitals for Reception of a Specified Class of Patients.—Under the Private Hospitals Act, 1908, a license may be granted for the reception of "medical and surgical cases," "lying-in cases," or "medical, surgical and lying-in cases."

There is no provision made for the licensing of premises for the reception of "medical cases" only or of "surgical cases" only. Therefore, if the applicant for a license intends to take medical cases only, the applicant must register for surgical cases also, and some provision for such cases is therefore incumbent on the licensee.

It is hoped that the Private Hospitals Act, 1908, will later be amended and brought more into line with modern administrative practice; such anomalies could then be rectified.

Comments on Tables I and II.

Table I.—As indicated in this table, hospitals licensed for medical and surgical cases only, constitute but a small proportion of the total premises licensed, the lying-in hospitals still constitute the larger proportion and, although the number of “ medical, surgical and lying-in hospitals ” has increased somewhat at their expense, lying-in hospitals constitute 48·4 per cent. of the total number of licensed premises compared with 50·1 per cent. in 1932.

Table II.—The number of hospitals containing 4 to 10 beds still comprise the largest proportion of those licensed, being 45·2 per cent. of the total this year, compared with 48·0 per cent. in 1932.

TABLE I.—Showing the Classification of Private Hospitals Licensed at 31st December, 1933, according to nature of cases received and the total number of beds provided by each class of hospital.

	Medical, Surgical and Lying-in.		Medical and Surgical only.		Lying-in.		Total.	
	No. of Hospitals.	No. of Beds.	No. of Hospitals.	No. of Beds.	No. of Hospitals.	No. of Beds.	No. of Hospitals.	No. of Beds.
Sydney and District	109	2,139	29	524	131	528	269	3,191
Country Districts	215	1,842	11	132	210	839	436	2,813
Total	324	3,981	40	656	341	1,367	705	6,004

TABLE II.—Showing Classification of Private Hospitals Licensed at 31st December, 1933, with respect to size, as signified by the number of beds available.

	1.	2.	3.	4-5.	6-10.	11-20.	Over 20.	Total.
Sydney and District	24	21	30	41	59	55	39	269
Country Districts.....	32	50	57	88	141	59	9	436
Total	56	71	87	129	200	114	48	705

HOSPITAL ADMISSION DEPOT ; MEDICO-LEGAL SECTION, Etc.
REPORT OF THE GOVERNMENT MEDICAL OFFICER FOR SYDNEY FOR THE YEAR
ENDED 31ST DECEMBER, 1933.

Medical Staff.

DR. ARTHUR PALMER, Government Medical Officer for Sydney; Dr. C. E. Percy, Medical Officer.
Depot Assistants, 2; Night Officer, 1.

MEDICAL WORK.

Arrangement of Admissions to Hospitals and Homes and Outdoor Treatment.—The Depot is open for this purpose from 9 a.m. to 5 p.m., Monday to Friday, and from 9 a.m. to 12 noon on Saturday. At all other times a night officer is available.

During the year ending 31st December, 1933, 11,477 persons were admitted through the Depot to the various Metropolitan hospitals. In 1933, 5,793 were admitted to the State Hospitals and Homes at Lidcombe, Liverpool, Newington, George-street and Macquarie-street, Parramatta; 964 to the Convalescent Homes at Camden and Vacluse; and 1,012 persons were referred to the Metropolitan hospitals for outdoor treatment.

Another activity of the Hospital Admission Depot is the determination of the need of applicants for spectacles, artificial eyes and other surgical appliances.

Medical Examinations for State Government Departments.—These examinations were made as follows:—

- (a) of persons claiming or receiving aid from the Child Welfare Department;
- (b) for retirement from the Public Service on account of invalidity;
- (c) pensioners under the Superannuation Act;
- (d) of Pilots;
- (e) to ascertain the fitness of officers to continue duty after reaching 60 years of age;
- (f) examination of applicants for the Widows' Pension and for renewals of pensions;
- (g) examination of boys for fitness to undergo courses of farm training.

Some of the above persons were visited in their own homes by the Medical Officers.

Medical Examination of Police Recruits.—321 intending recruits were examined during 1933. Of these, 94 were classed as fit. Some of those rejected were subsequently re-examined and accepted when their defects were remedied, or when they reached the required physical standards.

On completion of twelve months' service all probationary constables are again examined at the Police Headquarters. Two such examinations were performed in 1933.

Medical Supervision of Sick Police.—This is carried out daily by the Government Medical Officer at the Police Headquarters. The sick or injured members of the Force attend for treatment or for the purpose of reporting the progress of their illness. The average daily number of police on sick report for 1933 was 72.

Any other matters concerning the health of the Police Force are also attended to.

MEDICO-LEGAL WORK.

Examination of Alleged Rape and Criminal Assault Cases and Examination of Criminals.—These cases are examined at all hours, as it is usually desirable that they be examined as soon as possible after the offence. Examinations are made to determine any injury or to ascertain the mental condition of these persons. 105 examinations were made in 1933.

In addition, exhibits connected with these cases or with poisoning cases, etc., are seen before being sent to the Microbiological or Chemical Laboratory.

This work entails the attendance of the medical officers at the law courts in the city and suburbs and at the Central Criminal Court and the Quarter Sessions, and occasionally in the Country, for the purpose of giving evidence.

Work for the Coroner's Court entails the daily attendance of the Government Medical Officer at the City Morgue for the purpose of examining dead bodies in connection with suicides, murders, violent and uncertified deaths, and the giving of evidence at the Coroner's Court.

During 1933, 339 examinations of dead bodies were carried out; the figures for 1932 being 308.

Lunacy Work.—The Reception House at Darlinghurst is visited daily by a medical officer for the purpose of examining persons detained there. 1,004 persons were certified as insane in 1933.

In addition, arrangements were made for the transfer of suitable cases to State Hospitals and Homes.

Vaccinations.—Members of the Police Force are vaccinated at the Police Depot during their course of instruction, and members of the general public at the Hospital Admission Depot. 54 vaccinations were performed in 1933.

The medical officers attached to this Branch are on duty at all hours and are liable to be called upon at any time by the Police Department for any urgent work of a medico-legal nature.

Ambulance Removals.—The Hospital Admission Depot arranges for the transport of patients to the various Metropolitan hospitals and to the State Hospitals and Homes. This work is carried out by the Central District Ambulance by means of its own ambulances or those of adjacent districts.

Ambulance Removals during 1931, 1932 and 1933:—

					1931;	1932.	1933.*
Departmental ambulances	...	...	...	...	2,100	2,000	.....
Central District ambulances	...	...	...	...	10,225	8,112	11,974
Total removals	...	...	...	...	12,325	10,112	11,974

* An arrangement was come to with the Central District Ambulance during 1933, under which all ambulance work required by the department was taken over by the Central District Ambulance from the beginning of July, 1933.

SECTION I.—B.

DIVISION OF MATERNAL AND BABY WELFARE.

ANNUAL REPORT FOR YEAR ENDED 31st DECEMBER, 1933.

Director: Dr. E. Sydney Morris; Assistant to the Director, Dr. Elma Sandford-Morgan.

PART I.—MATERNAL WELFARE.

The reduction of the maternal mortality rate is a problem whose solution has so far evaded the efforts of the health authorities of most civilised countries. Though the general death rate continues to decline steadily, the maternal death rate all over the world remains disappointingly at more or less the same level.

This is all the more disquieting in view of the fact that the general standard of living and of personal hygiene has risen so considerably in modern times, and that the medical and nursing professions are appreciating more and more the need for strict asepsis in the conduct of labours.

It is fully realised that many of these deaths in childbirth are avoidable and that the decline in the maternal death rate in New South Wales should be much more rapid than it is. In Table I, taking the quinquennial period 1909–1913 as 100, this gradual decline over the last twenty years is shown, the percentage ratio for 1929–1933 reaching 87.

As seen in the same table, the maternal death rate, which had shown in the two previous years one of the periodic rises which occur, fell again in 1933 to 4·8 per 1,000 live births. The number of maternal deaths (excluding illegal operations) was 212

The number of births in New South Wales during 1933, though very slightly in excess of the number in 1932, still shows a marked decrease, being 44,195.

The figures for this State are extremely accurate, as every death of a woman of child-bearing age which has any likelihood whatever of being due to a puerperal cause is investigated by an officer of this Division, and the Government Statistician's figures are compiled on the results obtained. It is thus impossible for any death which might have been of puerperal origin to be overlooked and classified otherwise; on the contrary, as a result of this extreme care, it is possible that the maternal mortality rate in New South Wales is shown to a disadvantage when compared with countries where such precautions are not taken.

TABLE I.

Year.	Total Births.	Total Puerperal Deaths.	Deaths from Illegal Operations.	Percentage of Total Deaths caused by Illegal Operations.	Maternal Mortality Rate, excluding Illegal Operations.	Ratio.*
1909	43,769	252	8	3·1	5·5	100
1910	45,533	261	8	3·0	5·5	
1911	47,677	279	12	4·3	5·6	
1912	51,993	305	16	5·2	5·5	
1913	52,134	329	10	3·0	6·1	
1914	53,615	296	9	3·0	5·3	93
1915	52,885	272	8	3·0	4·9	
1916	52,575	297	16	5·3	5·3	
1917	52,467	327	22	6·7	5·8	
1918	50,700	267	15	5·6	4·9	
1919	48,528	263	17	6·4	5·0	85
1920	53,974	331	27	8·1	5·6	
1921	54,634	281	33	11·7	4·5	
1922	55,214	279	32	11·4	4·4	
1923	54,112	283	33	11·6	4·6	
1924	53,670	291	32	11·0	4·8	90
1925	54,615	325	40	12·3	5·2	
1926	53,126	276	40	14·5	4·4	
1927	53,858	352	46	13·0	5·6	
1928	54,800	327	32	9·7	5·4	
1929	52,676	278	33	11·8	4·6	87
1930	52,136	304	44	14·4	4·9	
1931	47,724	288	45	15·6	5·1	
1932	44,905	276	50	18·1	5·02	
1933	44,195	246	34	13·8	4·8	

* Per cent. ratio of quinquennial averages to average of 1909–13 which is taken as 100.

In Table II these deaths from the various causes incidental to childbirth are shown as follows:—

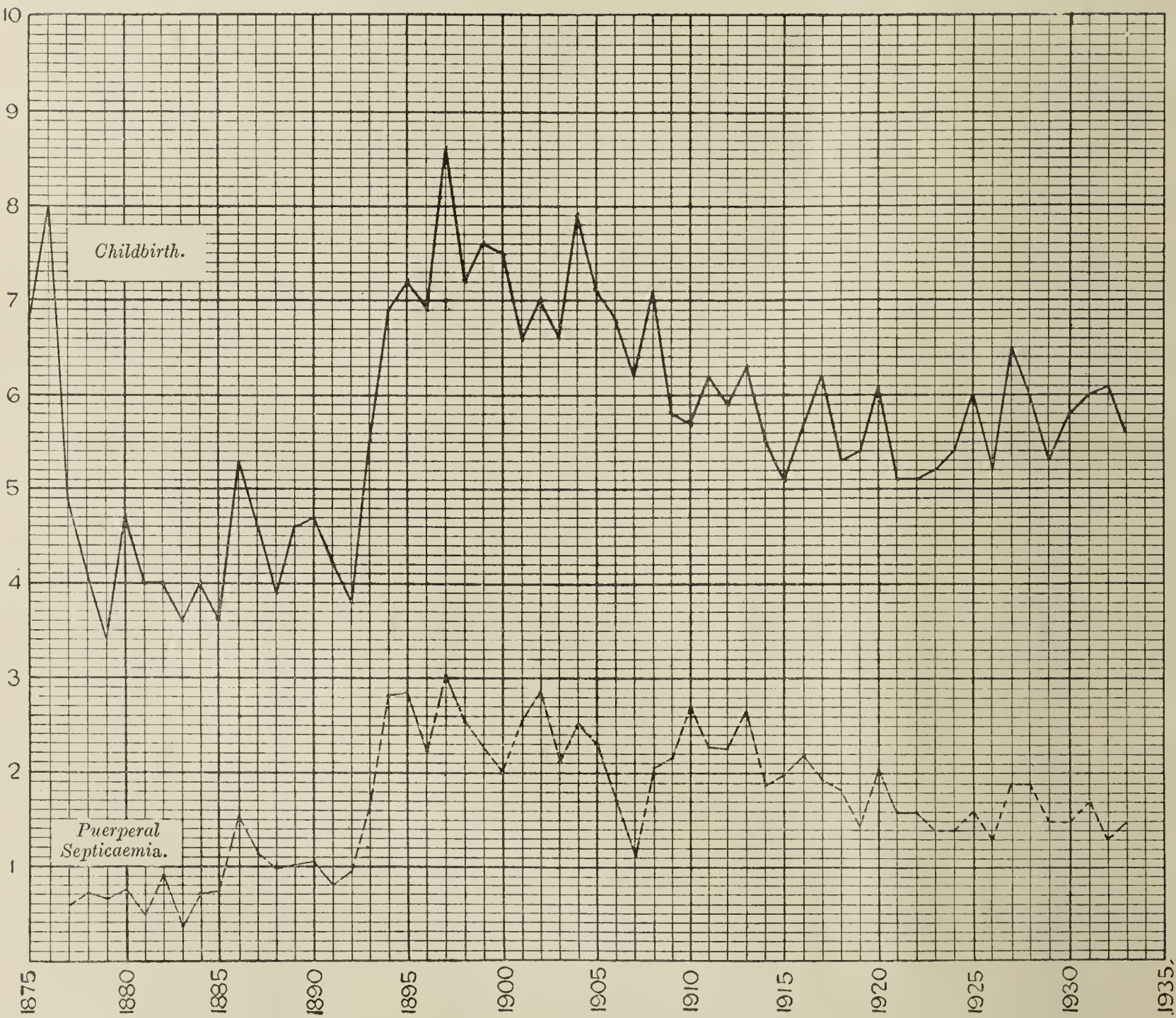
NEW SOUTH WALES.—Deaths Incidental to Childbirth, 1929–1933.

Causes.	1929.		1930.		1931.		1932.		1933.	
	No.	Rate per 1,000 Births.	No.	Rate per 1,000 Births.	No.	Rate per 1,000 Births.	No.	Rate per 1,000 Births.	No.	Rate per 1,000 Births.
Accidents of Pregnancy	29	·55	33	·63	24	·53	24	·53	26	·59
Puerperal Hæmorrhage	34	·65	36	·69	33	·69	39	·87	31	·70
Puerperal Septicaemia	49	·93	42	·81	41	·85	26	·58	34	·77
„ „ following Abortion, Miscarriage.	30	·57	38	·73	41	·85	33	·73	32	·73
Albuminuria and Eclampsia	48	·91	41	·79	53	1·11	61	1·36	51	1·15
Phlegmasia Alba Dolens, Puerperal Embolism, Sudden Death	26	·49	24	·46	23	·48	16	·35	16	·36
Other Casualties of Childbirth	29	·55	46	·88	28	·58	27	·60	22	·50
Total	245	4·65	260	4·99	243	5·09	226	5·02	212	4·80
Illegal Operations	33	·63	44	·84	45	·94	50	1·12	34	·77
Grand Total	278	5·28	304	5·83	288	6·03	276	6·14	246	5·57

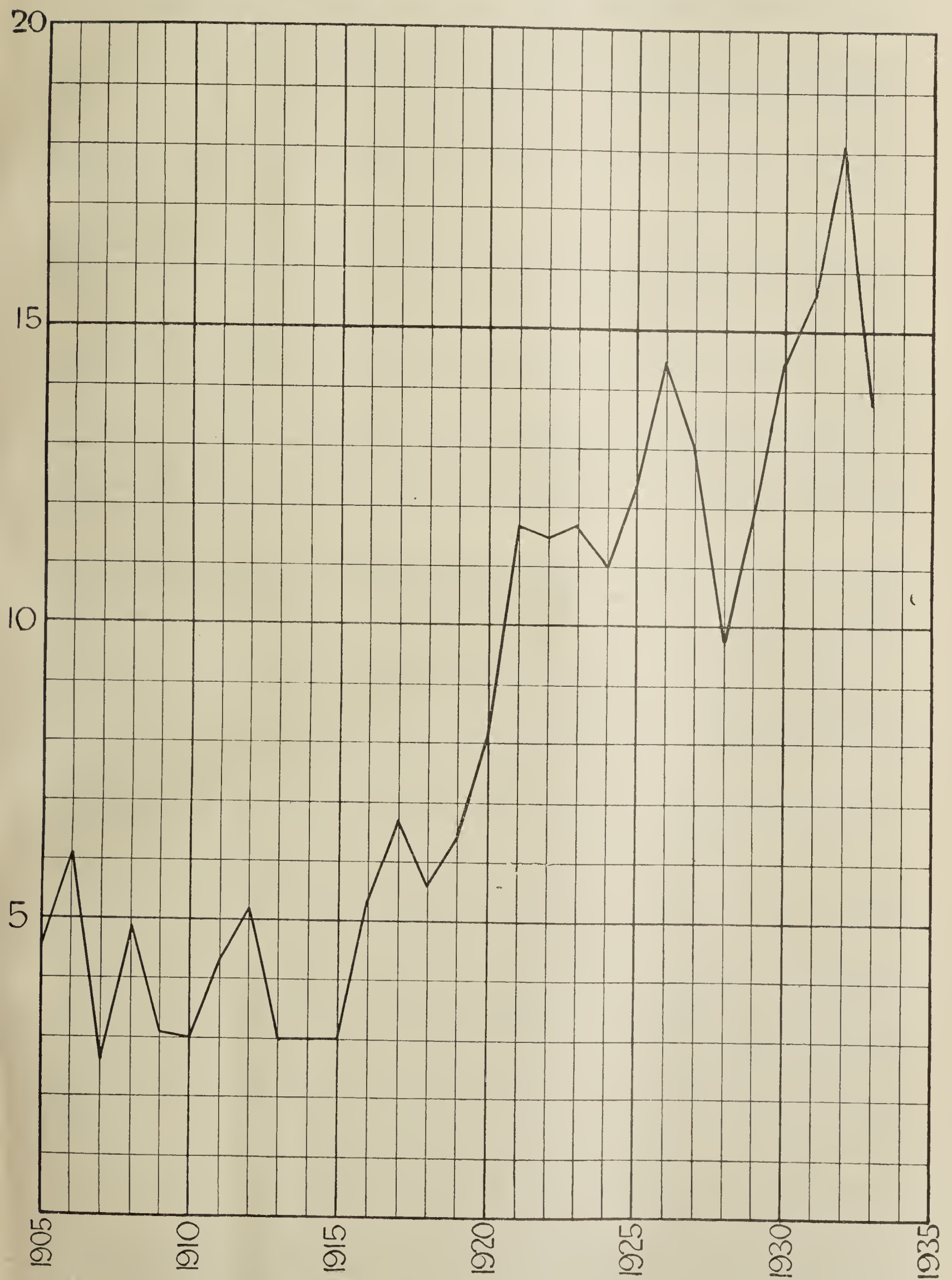
* 44231—C

GRAPH No. 1.

CHILDBIRTH AND PUERPERAL SEPTICAEMIA.
Annual Death Rate of Women per 1,000 Births in New South Wales, 1875-1933.



GRAPH No. 2.

ILLEGAL OPERATIONS.**Percentage of Total Maternal Deaths in New South Wales, 1905-1933.**

In Table II the various causes of death in childbirth during 1933 are classified.

According to the 1929 revision of the International List of Causes of Death, toxæmias of pregnancy are now grouped along with albuminuria and eclampsia, instead of under the heading "Accidents of Pregnancy" as heretofore. Of the deaths under the heading "Albuminuria and Eclampsia" in 1933 (51), 43 were actually from these causes and the remaining eight from other toxæmias of pregnancy.

Accidents of Pregnancy.—This group includes abortions not returned as septic, ectopic gestation, hæmorrhage after miscarriage and other accidents.

Of the 26 deaths in this class in 1933, 16 cases were ectopic gestations, and, contrary to the usual conditions, most of them occurred in the metropolitan area. The remaining ten cases were abortions.

There is little doubt that among these abortions, as well as in the group "Septicaemia following Abortion" there are many cases which were self-induced, but concerning which there is not sufficient evidence to warrant their inclusion with "Illegal Operations." From the history obtained there is reason to think that at least three of the ten abortions were of this nature.

Illegal Operations.—Graph No. II shows vividly that, with occasional remissions, this rate has been rising year by year, reaching as high as 18.1 per cent. of the total puerperal deaths in 1932. Figures for the year 1933, however, show one of the remissions, illegal operations accounting for 34 deaths out of a total of 246 (*i.e.*, 13.8 per cent.)

There can be no doubt that the amount of deliberate interference with pregnancy is increasing all over the civilised world, and once again I would draw attention to the disquieting fact that the majority of these deaths in New South Wales each year occur among married women (already the mothers of families, as the result of deliberate interference on their own part, not, as might be expected, among desperate unmarried girls, and not, apparently, as the work of professional abortionists.

Of the 34 victims in 1933, 20 were married women, 6 widows or divorcees and 8 single women.

As the means of producing abortion are more easily obtainable in cities, it is not surprising that, as usual, almost all the deaths from illegal operations—30 out of 34—occurred in the cities of Sydney and Newcastle.

It was seen that at least three of the ten deaths from abortion in the group "Accidents of Pregnancy" were almost certainly self-induced, and it will be seen, when considering deaths from puerperal septicaemia following abortion, that of 32 cases in that group, ten were almost certainly brought on by the women themselves. In both of these groups, also, the majority of the women were married—the former group included only one divorced and one single woman, and the latter three single girls and three women living apart from their husbands.

Puerperal hæmorrhage.—The number of fatal cases of puerperal hæmorrhage occurring each year does not decrease, as one would expect, with increasing facilities for prevention, treatment and transport. Furthermore, in most years these fatalities appear just as likely to occur in the metropolis as in country districts—although of the 31 cases in 1933 the minority (12) were metropolitan ones, of which eight, occurred in public maternity hospitals.

Nine of the 31 deaths from hæmorrhage were due to placenta prævia.

Five patients died after post-partum hæmorrhage, in spite of being delivered in hospitals where every facility for treatment was obtainable.

One woman died of a ruptured uterus, during the induction of labour by gr. V. doses of pitocin. She began to bleed, and the uterus was found to be tender, and not contracting, so delivery was hastened by internal podalic version. At post-mortem examination the uterus was found to be ruptured.

One country case of post-partum hæmorrhage was that of an aboriginal, confined in a camp by another aboriginal. In another camp an aboriginal had an adherent placenta, resulting in post-partum hæmorrhage. Both women died before medical aid arrived.

In two cases there was complete separation of the placenta, which was found lying free in the uterine cavity. One of these occurred at six months, with no premonitory symptoms, except vague abdominal pains for six days previously, for which the patient had sought no advice, and in the other case accidental hæmorrhage occurred, for which Caesarian section was performed.

Two patients were in bed in country hospitals undergoing medical treatment for intercurrent diseases (toxic goitre and myocarditis, respectively) when fatal accidental hæmorrhages occurred. The former case was one of placenta prævia and the patient gave a history of similar condition at a previous confinement.

In one case, the sudden onset of albuminuria ushered in an accidental hæmorrhage. Caesarian section was performed immediately, and the uterine walls were found to be friable and the cavity of the organ full of blood clot.

Puerperal Septicaemia.—If cases of post-abortive septicaemia are included (32), this group continues to account for over one-quarter of the total maternal deaths (66 out of 246). Even excluding such cases, the death rate from puerperal sepsis (.77) as shown in Table II, does not show much tendency to reduction, a reflection upon our standard of asepsis and technique.

It is interesting to contrast these figures with those of New Zealand, where the sepsis rate in four years has been lowered from 2.01 to 0.68 per 1,000 births, although there—as elsewhere—the total maternal mortality rate has remained practically stationary.

The gratifying fall in the puerperal sepsis rate in that Dominion has been ascribed largely to the wider application of the principles of asepsis and to the reduction in the number of instrumental deliveries.

Of the 34 deaths from puerperal septicaemia following labour in New South Wales in 1933, five had been forceps cases.

Eleven of the 19 metropolitan cases were delivered in public maternity hospitals, one was admitted with the membranes already ruptured; two were "failed forceps" cases sent in from outside; one was under treatment for syphilis and one showed definite evidence (perionychia) of a blood infection before undergoing Caesarian section.

Of the two cases which became septic after normal delivery in public hospitals, one had been discharged quite well, but was readmitted after a few days suffering from septicaemia, and the other—after a labour in which there was no manipulation and no vaginal examination—developed pyrexia with rigors on the night of delivery. Subsequently, the history was obtained from her relatives of "shivering attacks" and malaise the day before she was admitted to hospital in labour.

Among the 15 country cases was an aboriginal woman delivered instrumentally in a hut and nursed thereafter by an aboriginal "nurse." In one case the cord had prolapsed two days before the patient obtained medical attention. In another, there was complete inversion of the uterus in the third stage. One woman developed sepsis after normal labour, the infant later developed erysipelas and died, when five weeks old, while another child of the patient developed scarlet fever two days after the mother's confinement. Two patients had very marked pyorrhoea alveolaris, but were not seen during pregnancy by any medical practitioner, and so the condition was allowed to go untreated.

Altogether, three of the deaths from puerperal septicaemia may be ascribed to (necessary) interference on account of puerperal hæmorrhage.

With regard to deaths from sepsis following miscarriage, it is difficult at present to see how this rate may be reduced. The average woman appears to regard a miscarriage—whether natural or induced—as a simple affair which does not call for medical treatment, and so in the majority of cases, death (which may be due to sepsis, hæmorrhage or any other complication), is really the result of neglect and ignorance.

Albuminuria and Eclampsia and other Toxaemias of Pregnancy.—As stated above, of the 51 deaths in this class, 43 (·97 per 1,000) were due to albuminuria and eight to other toxæmias of pregnancy.

Pyelitis of pregnancy is classified with albuminuria. The reduction of the death rate from these causes, it is generally agreed, depends almost more upon prevention by successful educational propaganda than upon medical treatment of the conditions when they occur, that is to say, in hospitals or communities where thorough ante-natal supervision is carried out, eclampsia is practically eliminated and other toxæmia controlled or avoided. Until some means of getting in touch with expectant mothers early in pregnancy, and of overcoming the usual prejudice on the part of such women to place themselves under supervision, can be devised, our hospitals will continue to be receiving stations for women in eclamptic convulsions and coma.

This Division is fully awake to this fact and loses no opportunity of impressing the public, through leaflets, radio talks, in the press and through the medium of Baby Health Centre nurses, with the necessity for early and regular ante-natal care.

In spite of the lethargy generally encountered, it would appear, however, that the lesson is being slowly assimilated, as each year, though the actual number of fatal cases has not yet begun to lessen the number of women who have had at least some ante-natal supervision increases gradually. Of the 43 deaths from albuminuria in 1933, 19 occurred in the metropolitan area, and 24 in the country, and 18 of the total number (*i.e.*, 8 in the city, and 10 in the country) had regular ante-natal care after once reporting to their doctors. The tendency, though, is still not to report until the late months of pregnancy. The remainder of the women had no supervision at all, or had it erratically. Twenty-one of the women were primiparae.

In most of the cases where death occurred in spite of ante-natal care, pre-eclamptic symptoms were late in onset and failed entirely to respond to treatment.

One metropolitan patient died at 5½ months of pyelitis, in spite of early and intensive treatment. Another woman developed pre-eclamptic symptoms as early as three months and died in a convulsion one hour after premature labour at six months. In this case, however, ante-natal treatment, though regular, appears to have been inadequate.

One elderly primipara under constant medical supervision suddenly developed albuminuria which persisted in spite of treatment including finally the induction of labour at eight months. Her condition, however, was aggravated by persistent tachycardia and hyperthyroidism, and death was probably due to her myocarditis.

A very young primigravida attended the Out-patients' Department of one of the metropolitan maternity hospitals from the sixth month, until Caesarian section was performed at eight months, on account of eclampsia. During all that time she had appeared perfectly well and her urine was free of albumin. She retired to bed quite well the night before death, and during the night relatives heard a fall and went in and found the girl in a convulsion. She was immediately admitted to hospital and had 24 convulsions altogether before it was decided to empty the uterus by Caesarian section. Her blood pressure was then 200/100 mm., but at no time up till her death, 24 hours after delivery, did the urine contain any albumin.

Seven of the patients in this group gave a history of previous renal disease, three having actually suffered from eclampsia during former labours.

One primipara had had regular ante-natal care and had not shown any pre-eclamptic symptoms until she developed marked oedema at term. Labour was quick and normal, but acute nephritis supervened and, after several attacks of acute pulmonary oedema, the patient died, in spite of all treatment.

In one case it is doubtful whether the acute nephritis was really due to pregnancy, or just coincident, as the symptoms occurred in the third month, and, in spite of treatment, progressed until blindness, uraemia, and finally death supervened at four months before induction of abortion was complete. In another case also albuminuria occurred very early and the patient died (after miscarriage) when only two months' pregnant.

Five of the deaths from toxæmias of pregnancy were due to hæmatemesis. One patient, who was three months pregnant, had albuminuria and glycosuria. Labour was induced successfully by "Interruptin" and the albuminuria cleared up, but glycosuria increased and vomiting continued until the patient died six days later in coma.

In another case pregnancy was at such an early state that at first the diagnosis was doubtful. The patient died of a sudden cerebral hæmorrhage after three weeks' excessive vomiting.

Another woman had suffered from hyperemesis with hæmatemesis throughout pregnancy, but did not seek medical advice until a month before term. It was found that her urine contained half albumen and she was admitted to hospital, where, however, she died of further hæmatemesis after delivery.

One unusual case showed a sudden onset of asthma at the fifth month, believed by the medical attendant to be toxic in origin, and she died, undelivered, of acute pulmonary oedema.

Phlegmasia, Alba Dolens, Puerperal Embolism and Sudden Death.—There were 16 deaths in this class in 1933. In five of the cases death occurred quite suddenly and unexpectedly from pulmonary embolism after normal labours. One woman had marked varicose veins of the legs, but the other four had shown no abnormal condition whatever. A sixth collapsed and died quite unexpectedly in a public maternity hospital 50 minutes after a difficult delivery, from the shock of which she had apparently recovered.

Two patients died of pulmonary embolism before ever coming into labour. One of these women was of a gross type—due to pituitary disorder—and had experienced previous difficult confinements. In the ninth month of pregnancy she was suddenly seized with a severe attack of dyspnoea and cough and general symptoms of acute pulmonary oedema, and death supervened in a few minutes. The other woman a young primigravida, was apparently quite well, until at about eight months, she suddenly began to foam at the mouth, and was dead in a few moments, before any help could be summoned.

Of two other cases, one occurred suddenly about half an hour after a rapid but strenuous labour where there had been considerable post-partum hæmorrhage, and the other patient developed pulmonary embolism and died in about half an hour one week after premature labour brought on by an attack of acute bronchitis.

The remaining cases in the group were deaths from pulmonary infarct or from coronary thrombosis subsequent to venous thrombosis after delivery.

Other Accidents of Childbirth and Conditions of the Puerperal State.—These deaths were 22 in number. The group embraces death after Caesarian section (5), dystocia from various causes, puerperal mania, etc.

The indications for Caesarian section were as follows:—(a) Justo minor pelvis (death occurred from pulmonary embolism one hour after operation); (b) Post-maturity (unsuccessful attempts at version had been made at two separate country places and then the patient was sent to Sydney, necessitating in addition to her other discomforts, two changes of ambulance. The uterus was already ruptured upon her arrival at hospital and section was performed as a last hope); (c) Contracted pelvis and twins (internal hæmorrhage and death occurred next day); (d) Ruptured uterus at term (due, apparently, to a fall two days previously, though the patient had not complained at the time. Rupture occurred at the onset of labour); (e) Rigid cervix owing to extensive fibroids.

Other accidents include several cases of dystocia, acute myocarditis during delivery, heart failure under anaesthesia, twin labour in a case of pernicious anaemia (death occurred before the birth of the second infant, the mother being delivered in a very poor home with only a midwife in attendance), and a case of cerebral hæmorrhage during the second stage of labour in a woman of 41, with death 36 hours later.

There were five fatal cases of puerperal insanity in 1933. One of these women gave a history of puerperal mania after her (only) previous labour eleven years before, necessitating a year's detention in a mental hospital. Another gave a family history of puerperal insanity and she herself became pyrexial and mentally confused on the fourth day after a difficult labour. After about three week's treatment her mental condition improved, but she died suddenly of symptoms pointing to a fatty heart.

Two women, country cases, developed mental symptoms during pregnancy, one dying unconfined at term and the other, two years after delivery.

The fifth patient, a young primipara, died of insanity after a labour which was difficult, in spite of full ante-natal supervision and all hospital facilities at delivery. In this case, too, the puerperium was pyrexial, as would appear frequently to be the case with these puerperal confusions, suggesting a toxæmic factor in their causation.

THE ADMINISTRATIVE CONTROL OF MATERNAL MORTALITY.

The activities of the Division of Maternal and Baby Welfare have continued throughout the year 1933 on the same lines as in previous years since 1929, when the medical and nursing staff was augmented. Private hospitals have been inspected regularly, and the work of practising midwives supervised throughout the State. There are six special supervisory nurses engaged in this work, three of whom are engaged exclusively in country work, visiting every part of New South Wales, while two confine their activities to the metropolitan area, and the sixth is occupied entirely with pre-natal work, conducting clinics, under medical supervision, in metropolitan and suburban Baby Health Centres.

The administrative control of maternal mortality in the State of New South Wales is best considered under eight headings.

1. *The Training of Medical Practitioners and Midwives.*—Since the establishment of a Chair of Obstetrics, the curriculum of the Medical School within the University of Sydney has continued to afford increasing scope for the acquisition of both practical and theoretical knowledge of midwifery by the medical student. Both ante- and post-natal supervision of the mother and post-natal care of the child, with special attention to breast-feeding and to the treatment of premature infants, are taught to the students in their lectures and in practical demonstrations at the obstetric hospitals and at the Tresillian Mothercraft Training School.

As a result, the graduate of to-day passes out into general practice with a much better grounding in this all-important branch of medicine, and this increased knowledge of, and interest in, maternal and infant welfare is already evident among the younger practitioners.

Post-graduate facilities, also, have been much increased, largely through courses arranged from time to time at these institutions by the New South Wales Branch of the British Medical Association, so that the older practitioner, too, has ample opportunity of keeping in touch with modern advances in the technique of midwifery.

The training of midwives has undergone considerable extension during the year. As from 1st January, 1933, a most important innovation has been introduced, lengthening the course of training both of midwives and of general-trained nurses seeking the obstetric certificate. In the former case the course has been extended from twelve to eighteen months, and in the case of general trained nurses, from six to nine months.

These periods of training are, with the exception of Queensland, now uniform throughout all the States of the Commonwealth.

The training is also becoming broader in that it now includes definite instruction in infant care and feeding, as in all the metropolitan midwifery training schools special "Tresillian" trained sisters are in charge of the newborn babies and the trainees thus obtain a thorough groundwork in infant welfare.

In 1933, there were 4,782 midwives registered in New South Wales, and all but 11 per cent. of these have been trained at one or other of the above institutions. All of them, moreover, continue to be under constant supervision by the Nurses' Registration Board, both through the Supervisory Nurses of the Division and through the fact that their registration is renewable yearly.

2. *The Supervision of Midwives' Practice.*—As stated above, this is carried out through the Supervisory Nurses of the Division who, in turn, are in close touch with the Nurses' Registration Board.

This supervision includes routine visits to practising midwives, as well as special visits when any complication arises in their practice, as notified through the Nurses' Registration Board. Supervision consists of the examination of registers and explanation of regulations, inspection of bags and equipment, and, very often, in the case of older midwives, of practical advice on everyday nursing problems (especially those dealing with infant feeding and care and with ante-natal supervision). Pamphlets dealing with such matters have been published by the Division and are distributed by the Supervisory Nurses.

3. *The Control and Supervision of Private Hospitals.*—The supervision of private hospitals is under the control of a Medical Officer of Health, working in close co-operation with this Division through the Supervisory Nurses, who, as stated before, include the inspection of private hospitals among their duties.

Full details of these activities will be found on p. 22.

4. *Provision of Adequate Public Maternity Accommodation.*—This is a matter that comes under the jurisdiction of the Hospitals Commission, which is giving full attention to the question.

Up to the present there is a great dearth of public maternity beds outside the metropolis, which often necessitates patients being brought long distances from far corners of the State.

Some of the larger country hospitals, however, already have excellent maternity blocks, and it is the intention of the Hospitals Commission to extend this system throughout the State. Meanwhile, certain organisations, notably the Country Women's and Bush Nursing Associations, have met the difficulty in certain districts by the provision of nursing homes with maternity beds.

5. *Notification and Investigation of Cases of Puerperal Infection.*—As has been seen earlier in this Report, the death-rate from puerperal sepsis continues to be a slur upon our standard of midwifery in New South Wales. As one step towards the control of sepsis, any puerperal pyrexia has been made a notifiable condition by the midwife, and puerperal infection is notifiable by both midwife and medical practitioner.

Puerperal pyrexia is defined under the Nurses' Registration Act as follows:—"Every midwifery nurse shall immediately report to the Nurses' Registration Board in writing if she is in attendance on a case of puerperal pyrexia, and shall forthwith take all reasonable precautions to provide against the spread of possible infection until she obtains advice from a medical practitioner that the patient's condition is not due to infection of puerperal origin. If, however, the patient's condition is due to such infection, the midwifery nurse shall forthwith notify the Board accordingly, and she shall not attend any other pregnant or lying-in woman until she produces to the Board a certificate from a legally qualified medical practitioner that she is not liable to convey infection, and has received the written permission of the Board to resume practice."

For the purpose of this regulation "puerperal pyrexia" is defined as any febrile condition occurring in a woman from the end of the first to the end of the tenth day after abortion, miscarriage or childbirth, in which a temperature of 100·4 deg. F. (38 deg. C.) or higher, occurs upon more than one day during that period."

Immediately upon receipt of a notification of a case of puerperal pyrexia by the Nurses' Registration Board a copy is served to the Division of Maternal and Baby Welfare and a medical officer of the Division follows up the case and ascertains from the medical attendant the cause of the pyrexia. If the cause be infection of puerperal origin, the nurse, as we have seen, may not attend other patients until given permission by the Board to do so. In this way, potential, as well as actual, cases of puerperal infection are checked and isolated.

Under the Private Hospitals Act, puerperal infection in private hospitals is notifiable, and no lying-in patients may be admitted until written permission is obtained from the President of the Board of Health (the Director-General of Public Health and Chairman also of the Nurses' Registration Board). In accordance with the Public Health Act, puerperal infection is now notifiable by the medical attendant also, and this notification acts as a check upon midwives and licensees of private hospitals, for immediately upon receipt of such notification, information is obtained from the medical practitioner as to whether any midwifery nurse was in attendance or whether the patient was in a private hospital.

During 1933, there was a considerable reduction in the number of notifications of puerperal pyrexia, only 153 notifications from midwives being received by the Nurses' Registration Board. (It is not likely that many cases failed to be notified.)

It rests entirely with the Chairman of the Board to decide how long shall elapse before a midwife who has been in attendance upon a case of puerperal pyrexia shall be allowed to resume practice. While every endeavour is made not to penalise the nurse unduly, the interests of the patient are given first consideration. Similarly, when a case of puerperal infection occurs in a private hospital, the President of the Board of Health endeavours not to close the hospital for a longer period than is considered necessary for safety.

Only 220 notifications of puerperal infection were received from medical practitioners in 1933, the majority of these occurring after abortions and being notified by the medical officers of public hospitals. There is no doubt that this number falls far short of the actual cases which occurred, as practitioners are still very lax over such notifications, particularly of sepsis following abortion, where they may only be called in once and may never have seen the patient before. Many practitioners, too, are under the impression that such a notification will be dealt with by the local authority and that, therefore, a certain amount of unavoidable publicity will result. Such, however, is not the case; these notifications are not followed up locally at all, but are sent direct to this Department, where a medical officer deals with them.

6. *Provision of Ante-natal Clinics.*—As stated earlier in this Report, propaganda urging the importance of the ante-natal supervision of mothers is carried out by this Division wherever and whenever possible, through the press, radio talks, lectures, and, personally, through the Baby Health nurses.

These nurses have unique opportunities of getting in touch with women in their own homes, yet even they find it difficult to persuade the average expectant mother of the necessity for supervision during pregnancy, and, of course, their contact is mainly with the multiparae. The young primipara has yet to be reached by any scheme, and the problem remains unsolved, here as everywhere else, of how these young women can be brought to see the need for, and to place themselves under, medical care during pregnancy.

In spite of the facility with which supervision may be obtained, at least in the metropolis, the majority of women in the State still come into labour having had no ante-natal care whatever.

All the metropolitan public maternity hospitals have ante-natal departments, and the departmental clinics conducted by this Division at ten of the suburban Baby Health Centres weekly make it possible for any expectant mother to obtain advice, and it is gratifying to note that the number of women, and particularly the number of primiparae, attending these clinics is gradually increasing. It is particularly gratifying to note, in the case of the departmental clinics, that the local midwives are being brought to realise the advantage and advisability of sending their patients along, particularly those patients who do not intend calling in any medical practitioner for their confinement. This is brought about largely by the amicable relationships which exist in most places between the local midwives and the Baby Health Centre Sisters, and also through the visits of inspection paid to the midwives by the Supervisory Nurses.

During 1933, nearly 6,000 expectant mothers visited the various Baby Health Centres throughout the State, but mainly, it is regretted, in order to obtain advice about baby clothes, or with requests for extra nourishment for themselves, and not for regular ante-natal care.

Nevertheless, the attendances at the ten departmental ante-natal clinics, and particularly at the evening clinic conducted weekly at Newtown, justify their continuation. The total attendances for the year 1933 were 2,185.

Whenever women attend these clinics who intend engaging private doctors, or entering public maternity hospitals, they are urged to place themselves as soon as possible under the care of the doctor who will confine them. The majority of the patients seen are of the latter category.

Many women, especially the wives of unemployed men, cannot afford the fares from outlying suburbs for regular attendance at the maternity hospitals, and these departmental clinics fill the breach in such cases.

Very often the supervision of such patients is undertaken at the special request of the hospital authorities.

I should like to record here my gratitude to the staffs of the various public maternity hospitals for the way in which they co-operate with this Department and are ready at all times to admit without any delay patients who are referred to them from these clinics.

I should also like to take this opportunity of expressing my appreciation of the dental work performed upon expectant mothers by the dental department of the Rachel Forster Hospital. Patients referred from the departmental ante-natal clinics are always attended to there with the least possible delay and much of the successful work of the clinics is due to this thorough dental hygiene.

7. *Education of the Public.*—This is carried out at every opportunity and through every possible channel.

Some one hundred newspapers throughout the State are supplied with regular articles dealing with health matters in general and mothercraft in general, and departmental publications are widely distributed. The booklets dealing with ante-natal care and infant welfare ("Healthy Motherhood" and "Our Babies," respectively) are in great demand and are especially appreciated by those mothers who are not in direct personal touch with a Baby Health Centre.

Educational work is also carried out through the co-operation of such organisations as the Country Women's Association, the Women's Branch of the Agricultural Bureau and the Girl Guides' Association. Once again the Annual Conference of the Agricultural Bureau at Hawkesbury College offered a valuable opportunity for getting into personal touch with women from all over New South Wales, and Dr. Sandford Morgan gladly availed herself of the invitation to address the women members.

8. *Research*.—There is perhaps no problem in medicine which is receiving more attention all over the world, and yet which is, so far, evading satisfactory solution, than that of the reduction of maternal mortality.

Obviously one of the first steps towards the solution of the particular problem here in New South Wales, apart from general considerations, is a clear understanding of the local conditions underlying these disasters, and so a full investigation into every maternal death occurring in the State during the last five or six years has been carried out by this Department, and at the time of writing, the classification and preliminary summary of findings is being carried out. Much of the information relating to the deaths during 1933 has been quoted in the earlier paragraphs of this Report.

The years during which these enquiries have been pursued have been the years of greatest financial stress, and the activities of this Division have necessarily been much curtailed. Nevertheless, the work has been allowed to suffer as little as possible, and one is justified in feeling satisfied that, on the whole, progress has been sustained.

PART II.—INFANT WELFARE.

Infant welfare work in New South Wales has expanded more during 1933 than it has done for several years. This is largely due, at least in so far as the country districts are concerned, to the co-operation of the Country Women's Association of New South Wales. This Association provides the quarters and equipment of country Baby Health Centres, while this Department supplies the nurses and controls the Centres. Without such help it would have been impossible, in these years of financial stress, to expand as it has done.

Seven new country Baby Health Centres were opened in this way during 1933—at Moss Vale, Mittagong, Berrima, Gunnedah, South Singleton, Gilgandra and Wellington.

Two new metropolitan Centres, also, were opened, at Five Dock and Punchbowl, while Earlwood—which was previously a depot run from Marrickville—was opened as a full-time Centre.

This brings the total number of Baby Health Centres in the State, at 31st December, 1933, to 108, 43 metropolitan, and 65 country.

No opportunity of carrying out infant welfare propaganda and instruction is overlooked. This is done through the usual channels—in daily and weekly papers throughout the State, by wireless talks, personal correspondence, etc.—and also through the Girl Guides' Association, Country Women's Association and Agricultural Bureau, which all offer great scope for such work. Much work is done in the schools through the Department of Education, lectures being given to the girls of 45 Domestic Science Schools in the State, 31 of the schools being metropolitan and 14 in country centres. Altogether, 2,500 girls attended these classes in 1933.

The infant mortality rate in New South Wales continues to fall steadily, dropping below 40 (39·35) per 1,000 births in 1933, for the first time on record. In the metropolitan area the infantile death rate fell even lower, to 36·82 in the year. Although this fall is gratifying, it is felt that the number of infant lives lost—1,739 under one year of age in 1933—should be capable of still much greater reduction.

The neo-natal death rate still remains disconcertingly high, being almost stationary. One half of the infant deaths occur soon after birth—in the first month of life—and it is realised here, as elsewhere, that this neo-natal rate depends for its reduction upon the same conditions, largely, as does the reduction of the maternal mortality rate.

Investigations, on similar lines to the investigations into maternal deaths as already referred to, have been carried out in New South Wales over some years and are now in process of tabulation.

The fall in the infant death rate, coinciding as it does with the extension of infant welfare work through the Baby Health Centres, cannot be accidental.

At these Baby Health Centres, no sick babies whatever are treated. Such babies are discouraged from attending there at all, and if they do attend they are referred to private practitioners or to public hospitals. The Centres exist for the teaching of mothercraft and supervision of infants along the simplest lines.

The main point stressed at the Baby Health Centres is that all women can at least partially breast-feed their babies, but that difficulties often arise which call for expert handling. The advice is supplied at the Centres by nurses who are fully trained and who hold, in addition to their general certificate, a special mothercraft ("Tresillian") certificate and are often midwifery-trained as well.

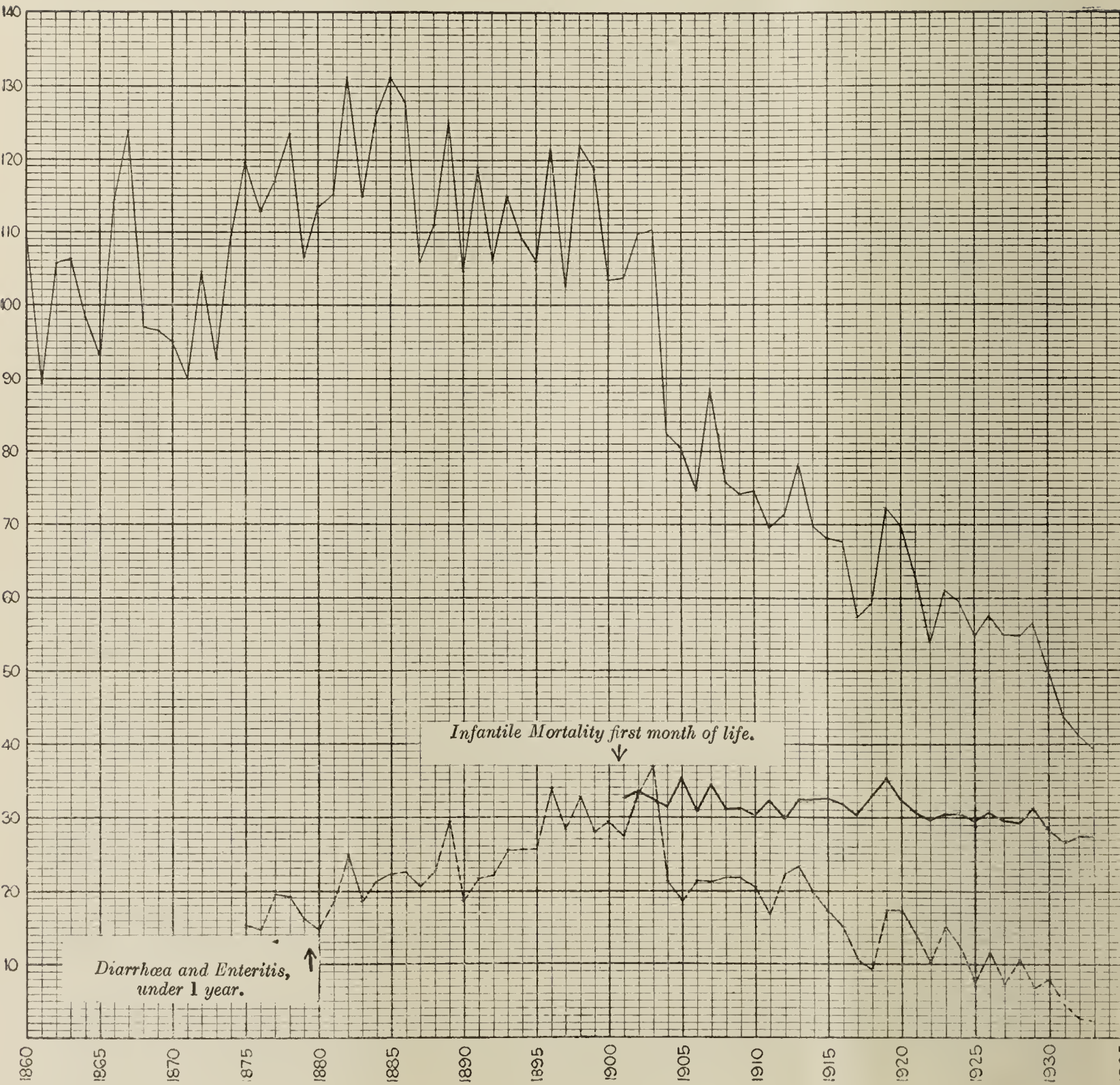
The fact that all the nurses receive their mothercraft training at the same institution ensures uniformity in the advice given at all Baby Health Centres throughout the State.

As soon as a registration of birth is received anywhere in the metropolis, or in a country town served by a Baby Health Centre, a Centre nurse visits the mother and invites her to attend there regularly with her baby. In 1933, 16,789 of these first visits to newborn babies were paid (and 50,605 subsequent visits to the homes, often at the request of the local medical practitioners), as a result of which 44,728 individual babies attended the Centres throughout the State in 1933.

GRAPH No. 3.

INFANTILE MORTALITY IN NEW SOUTH WALES.

Annual Death Rate of Children under 1 year per 1,000 Births, 1860-1933.
Deaths from Diarrhœa and Enteritis of Children under 1 Year, per 1,000 Births, 1875-1933.
Infantile Mortality in the 1st Month of Life, 1900-1933.



GRAPH No. 4.

DIARRHŒA AND ENTERITIS.

Under 2 years—BLACK Line.

Over 2 years—RED Line.

Annual Death Rate per 100,000 of the Population in New South Wales, 1875-1933.



When partial or complete artificial feeding is found necessary, the mother is advised how to modify cows' milk (fresh or dried) for her baby's requirements and how to take every precaution against contamination of the food supply and utensils. These lessons are being learned so well by the mothers of the State that the summer scourge of gastro-enteritis among infants is becoming a thing of the past, as will be seen by Graph 4, and even when such an epidemic occurs, not only are the breast-fed babies almost entirely exempt, but also those artificially-fed ones whose mothers are guided by the Baby Health Centres.

Artificial feeding is only resorted to when it has been shown by "test-feeds" that the baby is not receiving sufficient breast-milk. Even then, temporary and only partial artificial ("complementary") feeding is generally all that is needed, the mother being instructed, meanwhile, how to increase her supply of breast-milk until she has sufficient again to satisfy her baby's needs.

In 1933, 31,573 of these "test-feeds" were carried out.

The total number of attendances at the Baby Health Centres throughout the State once more shows an increase for 1933—being 514,170 (24,776 more than in 1932). This is all the more gratifying when one realises that the birth-rate continues to fall, being 44,195 in 1933 against 44,905 in 1932, and that financial stringency makes it more difficult for the mothers to afford means of transport.

The number of individual babies attending the Centres in 1933—44,728—was also an increase upon the number (43,144) attending in 1932.

In concluding, I desire to place on record my sincere appreciation of the continued practical assistance and co-operation of the Country Women's Association in furthering the scope of our activities and in helping to extend to country mothers the benefits of established Baby Health Centres. I wish to thank the honorary medical officers of the Centres for their great assistance during the year and to the staff generally I desire to express my sincere thanks for loyal support and co-operation under adverse circumstances.

E. SYDNEY MORRIS,
Director of Maternal and Baby Welfare.

TABLE III.—Showing Work of Baby Health Centres.

Baby Health Centres.	Visits to Individual New-born Babies.		Subsequent Visits to Homes of Babies.		Total Attendances, including Expectant Mothers.		Individual Babies Attending Centres.	
	1932.	1933.	1932.	1933.	1932.	1933.	1932.	1933.
Alexandria	283	218	1,557	1,342	11,140	10,836	802	819
Annandale	288	203	1,004	666	4,810	4,902	360	400
Ashfield	330	254	821	846	10,504	11,752	831	995
Auburn and Depot	457	460	1,176	891	9,748	10,310	857	786
Balmain	393	299	558	728	10,286	9,511	839	943
Bankstown and Depot ...	308	305	488	449	7,109	6,935	729	726
Burwood	560	531	1,261	982	13,057	13,482	1,440	1,302
Campsie.....	596	545	452	534	14,738	14,706	1,326	1,360
Chatswood.....	306	255	876	732	12,364	11,475	914	926
Chippendale	321	345	677	722	6,325	7,405	386	325
Daceyville	287	230	1,181	1,036	9,815	10,006	827	835
Five Dock (Nov., 1933) ...	...	12	...	12	...	301	...	94
Glebe.....	191	168	1,287	1,170	6,297	6,445	495	511
Granville	321	323	430	403	6,710	6,623	570	721
Hornsby	263	193	663	599	4,434	4,272	393	354
Hurstville and Depot	426	491	623	501	12,672	13,448	1,137	1,244
Kogarah	215	207	336	394	7,665	7,598	564	598
Lane Cove.....	185	184	1,123	879	7,202	6,705	527	466
Leichhardt	432	488	950	622	10,109	10,973	910	837
Manly.....	174	157	1,570	994	12,812	11,634	1,258	1,315
Marrickville	512	317	944	503	8,516	5,569	652	396
Earlwood		125		226		3,924		249
Mascot	247	263	510	816	6,938	7,283	595	641
Miller's Point.....	51	30	307	300	1,489	1,347	84	70
Mosman.....	249	177	1,319	867	12,091	11,964	796	641
Newtown	439	469	975	979	13,932	12,940	1,213	1,229
North Sydney.....	507	465	680	600	11,219	11,081	1,066	992
Paddington	291	332	592	822	10,196	11,787	827	828
Parramatta	354	255	703	888	10,651	9,913	792	1,060
Petersham.....	123	100	669	733	7,675	7,629	796	668
Pymont.....	88	75	583	623	3,312	2,667	200	160
Randwick	320	250	868	1,110	10,132	10,177	828	726
Rockdale	342	325	353	377	11,359	11,449	955	950
Rose Bay	368	374	894	781	11,580	11,924	1,047	1,063
Ryde and Depot	332	196	922	410	10,904	11,596	1,051	1,029
St. Peters	168	156	807	745	2,985	2,675	332	171
Surry Hills	243	220	849	1,278	7,968	8,390	641	683
Waverley.....	481	498	752	853	13,023	14,301	1,121	1,109
Woolloomooloo	204	181	815	925	10,325	9,624	857	646
Albury and Depot	106	110	588	475	6,046	5,885	440	470
Bathurst.....	168	170	500	490	4,323	5,075	516	260
Bowral and Depots	94	176	44	768	1,094	2,358	152	314
Broken Hill—Central	200	195	472	510	7,134	6,312	387	320
" " North	81	71	261	241	4,331	3,719	218	181
" " Railway Town	47	42	235	230	3,841	3,074	236	184
" " South	62	47	453	424	2,777	1,907	150	127
Casino	32	113	73	877	171	1,807	81	269
Cessnock and Depot	301	251	889	322	5,922	6,479	393	665
Cootamundra	145	128	933	1,027	3,454	3,327	336	325
Cowra and Depot	92	107	349	363	2,352	2,472	240	230
Dubbo and Depots	286	318	549	951	4,530	5,330	491	631
Forbes	101	110	518	684	2,804	2,520	290	263
Glen Innes.....	199	89	366	296	1,397	1,935	195	179
Gosford and Depots	18	50	37	118	166	2,392	87	297
Goulburn and Depots.....	276	240	1,053	1,240	6,265	6,415	713	677
Grafton	88	141	26	378	357	4,020	92	427
Gunnedah (Nov., 1933) ...	...	6	...	28	...	58	...	56
Hamilton and Depot	388	317	638	756	13,965	14,994	1,255	1,401
Inverell	119	167	383	386	2,119	2,397	242	273
Kurri and Depot	158	129	707	813	5,716	6,256	354	449
Lismore	44	271	26	375	434	4,219	112	385
Lithgow.....	311	280	1,129	1,234	5,047	5,090	496	481
Mayfield and Depots	213	216	776	730	11,489	13,217	1,047	1,172
Moree.....	69	76	917	885	2,802	2,746	297	306
Muswellbrook	52	70	244	234	1,418	1,566	131	145
Newcastle and Depots.....	371	350	862	1,128	9,164	9,730	963	1,125
New Lambton and Depot	332	237	366	299	3,687	3,864	420	395
Orange	303	296	692	792	3,712	4,223	443	344
Queanbeyan .....	...	93	...	726	...	2,131	...	195
Singleton and Depot	52	83	417	343	1,630	1,893	161	185
Tamworth and Depots ...	250	243	790	713	6,745	9,732	783	1,053
Wagga and Depots	304	457	567	645	7,249	7,391	629	634
West Maitland and Depot	216	214	745	737	6,502	6,110	675	627
Wollongong.....	151	146	596	577	3,932	4,080	469	338
Yass	56	51	1,471	1,235	2,462	2,128	301	225
Young	74	53	259	237	1,942	1,759	257	232
Total	17,502	16,789	49,560	50,605	489,394	514,170	43,144	44,728

1933: Test Meals, 31,573. Expectant Mothers advised, 5,910. New Cases enrolled, 22,885.

SECTION I—C.
COMMUNICABLE DISEASES.

1.—NOTIFIABLE INFECTIOUS DISEASES RECORDED IN NEW SOUTH WALES DURING THE YEARS ENDED 31ST DECEMBER, 1933.

(F. S. WEARNE.)

Public Health Acts, 1902–1921.

The Public Health Act, 1902, provides that the Governor may, by Proclamation in the *Government Gazette*, declare that any disease therein-named is an infectious disease. No alteration to the existing list was made in 1933.

	Notifiable from—	Cases and Deaths Notified.					
		1931.		1932.		1933.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever and paratyphoid	1st January, 1898	340	35	233	31	188	28
Scarlet fever	”	4,477	36	4,905	57	4,259	55
Diphtheria or membranous croup	”	4,432	168	4,310	160	3,912	169
Bubonic plague	23rd January, 1900.....	...	...	...	...	...	...
Infantile paralysis (including any form of acute anterior poliomyelitis, polioencephalitis or polio-myeloencephalitis)	1st February, 1912. Definition Re-proclaimed 14th August, 1931 ...	103	10	384	44	13	4
Epidemic cerebro-spinal fever (meningococcal meningitis)	11th October, 1915 ...	30	9	51	7	24	5
Encephalitis lethargica.....	1st April, 1926	20	16	12	18	11	15
Cholera	12th August, 1927 .....	...	...	...	...	...	...
Typhus fever .....	” .....	...	...	2	1	3	1
Yellow fever .....	” .....	...	...	...	...	...	...
Puerperal infection	16th August, 1929	319	83	292	59	222	100
	Total	9,721	357	10,187	376	8,632	377
	Population at 31st Dec.	2,519,300		2,542,034		2,613,776	

The number of cases of the above diseases notified in each district in 1933 and deaths therefrom are shown in Tables I–IV, pp. 38–46. For reasons of economy tables showing age and sex incidence and seasonal prevalence have been omitted. Pulmonary tuberculosis is notifiable under the Public Health (Amendment) Act, 1915, and venereal diseases under the Venereal Diseases Act, 1918 (see below).

The notifications of infectious disease dropped from 10,187 cases in 1932 to 8,632 cases in 1933, the principal decreases being 646 fewer cases of scarlet fever and 398 of diphtheria. Typhoid fever also declined, the notified cases totalling 188 in 1933 and 233 in 1932. The fatality rates from these three diseases were slightly higher, however, in 1933 than in 1932. The total deaths from notifiable diseases were 376 in 1932 and 377 in 1933; the case fatality rates for the two years being respectively:—*typhoid fever*—1932, 13 per cent.; 1933, 15 per cent.; *scarlet fever*—1932, 1·16 per cent.; 1933, 1·32 per cent.; *diphtheria*—1932, 3·71 per cent.; 1933, 4·23 per cent. A report on an outbreak of 36 cases of typhoid fever with 10 deaths associated with a country Religious Convention held at an open air camp, at which some 300 persons were present for several days, will be found on page 47. The source of infection was found in all probability to be a “carrier” who had recently become an adherent to the sect.

Infantile Paralysis.—13 cases and 4 deaths were notified in 1933.

Cerebro-spinal meningitis.—24 cases and 5 deaths were notified.

Encephalitis Lethargica.—11 cases were notified. The Statistician’s return shows 15 deaths. On investigation it is found that some of the deaths are due to non-notifiable forms of encephalitis, such as cerebral abscess, brain tumours, etc.

Bubonic Plague.—No case of plague has been recorded in New South Wales since 1923. Systematic trapping of rats along the foreshores used by overseas shipping is continuous; no infection was found among the 4,032 rats examined in Microbiological Laboratory during the year.

Smallpox.—No case of smallpox was reported during 1933.

Leprosy.—One case of leprosy was admitted to the Lazaret in 1933, and 1 patient died. There was one re-admission; 19 persons (16 males and 3 females) remained under detention on 31st December, 1933. A summarised report will be found on p. 91.

Endemic typhus fever.—Of three cases notified in 1933, one was in the metropolitan district, and two in the North Coast district.

PULMONARY TUBERCULOSIS—NOTIFIABLE UNDER THE PUBLIC HEALTH (AMENDMENT) ACT, 1915.

For report on the Tuberculosis Division, see p. 58. 1,441 cases of pulmonary tuberculosis were notified in 1933; and 951 deaths were recorded. The Waterfall Sanatorium report is on p. 97.

VENEREAL DISEASES ACT, 1918.

For report of the Commissioner, see p. 54. There was a total of 4,809 notifications in 1933, a decrease of 33 on the figures for 1932.

TABLE I.—Showing the number of notified cases of, and deaths from, the following diseases :—Cerebro-spinal Fever (Meningococcal Meningitis), Diphtheria and Membranous Croup, Encephalitis Lethargica, Infantile Paralysis (Acute Anterior Poliomyelitis), Plague, Scarlet Fever, Typhoid Fever (including Paratyphoid), Pulmonary Tuberculosis, and Puerperal Infection in the METROPOLITAN COMBINED DISTRICTS for the year ended 31st December, 1933.

Municipality or Shire.	Estimated Mean Population.	Typhoid and Paratyphoid.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Cerebro-spinal Meningitis.		Encephalitis Lethargica.		Pulmonary Tuberculosis.		Puerperal Infection.	
		C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
METROPOLITAN MUNICIPALITIES.																	
Sydney, City of ...	88,320	3	...	104	2	210	7	...	...	...	1	1	1	147	70	15	8
Alexandria	9,020	...	...	38	...	23	3	1	...	...	...	...	...	6	4	2	2
Annandale	12,210	...	...	32	1	20	...	...	...	...	...	...	...	18	7	3	...
Ashfield	39,360	...	...	53	1	29	1	...	...	1	...	...	...	15	12	3	1
Auburn	20,110	5	...	113	1	36	2	...	...	...	...	1	...	10	6	2	...
Balmain	28,270	3	...	214	1	99	7	...	...	2	...	...	1	29	7	5	2
Bankstown	25,390	...	...	60	1	37	1	...	...	...	...	...	...	17	8	4	2
Bexley	20,540	...	...	35	...	23	1	...	...	...	...	...	...	15	10	3	...
Botany	8,290	...	...	15	...	15	...	1	...	...	...	...	...	5	1	1	...
Burwood	19,370	...	...	31	...	25	...	...	...	1	...	2	...	11	10	1	...
Canterbury	79,060	...	...	273	3	140	2	...	...	...	...	...	1	58	44	7	3
Concord	23,220	2	...	48	...	38	...	...	...	1	...	...	...	16	12	3	1
Darlington	3,050	...	...	2	...	8	...	...	...	...	...	...	...	4	...	1	...
Drummoyne	29,210	...	...	58	...	24	1	...	...	...	...	...	...	16	9	7	2
Dundas	6,020	...	...	7	...	7	...	1	...	...	...	...	...	4	1	1	...
Eastwood	3,030	...	...	1	...	3	...	...	...	...	...	...	...	7	1	1	...
Enfield	14,780	1	...	17	...	19	2	...	...	...	...	...	...	17	6	1	...
Ermington and Rydalmere.	2,360	...	...	1	...	2	...	...	...	...	...	...	...	4	1	...	...
Erslevineville.....	6,640	...	...	21	...	13	...	...	...	...	...	...	...	3	4	4	2
Glebe	19,890	...	...	41	...	27	2	...	...	...	...	...	...	19	12	6	7
Granville	19,720	...	1	40	2	20	3	...	...	...	...	...	...	10	11	1	2
Holroyd (Pitt and Merrylands wards).	8,430	...	...	...	...	...	...	...	...	...	...	1	...	1	4	...	...
Homebush	3,190	1	...	2	...	7	...	...	...	...	...	...	...	5	3	1	...
Hunter's Hill	8,990	...	...	21	...	5	...	...	...	...	...	...	...	8	3	...	...
Hurstville	22,670	...	...	37	...	60	2	...	...	...	...	...	1	26	8	3	1
Kogarah	30,650	...	...	35	...	57	...	...	...	...	...	...	...	19	10	1	1
Kuring-gai	27,940	1	...	29	...	20	...	...	...	...	...	...	1	26	16	2	...
Lane Cove	15,130	1	...	16	...	27	1	...	...	...	...	...	...	9	13	1	1
Leichhardt	30,220	...	...	93	2	46	3	...	...	...	...	...	...	33	16	...	1
Lidcombe	17,380	5	...	28	1	14	...	...	...	...	...	...	...	34	11	2	2
Manly	23,260	1	...	28	...	38	3	...	...	1	1	...	...	12	6	2	...
Marrickville	45,380	...	...	195	3	51	...	...	...	...	...	...	...	46	14	4	1
Mascot	14,360	2	...	21	...	23	1	...	...	2	...	1	1	14	8	2	1
Mosman	23,670	...	...	36	...	18	1	...	...	1	1	...	...	9	3	...	1
Newtown	25,290	...	...	49	...	52	1	...	...	...	...	...	...	30	13	7	2
North Sydney.....	49,750	2	1	66	...	122	10	1	...	...	...	1	...	43	18	2	4
Paddington	24,690	1	1	54	4	35	2	...	...	1	1	...	...	31	23	6	3
Parramatta	18,080	...	...	50	3	13	...	...	...	...	...	...	...	25	15	2	1
Petersham	26,940	...	...	69	3	43	...	...	...	1	...	...	...	22	16	2	...
Randwick	78,960	6	...	128	2	112	3	...	...	4	...	...	1	59	44	15	1
Redfern	18,840	...	...	45	...	55	2	1	...	...	...	...	...	28	18	2	1
Rockdale	39,120	1	1	78	...	59	1	...	...	...	...	...	...	9	6	2	...
Ryde	27,860	5	...	49	...	51	2	...	...	...	...	...	1	10	12	5	1
St. Peters	12,550	1	...	36	1	32	2	...	...	...	...	...	...	16	7	5	1
Strathfield	12,150	...	...	19	...	10	...	...	...	...	...	...	...	6	3	...	...
Vauchuse	7,210	1	1	10	...	2	...	1	...	...	...	...	...	3	2	...	1
Waterloo	11,660	1	...	28	...	40	2	1	...	1	...	...	...	7	6	1	...
Waverley.....	55,910	3	...	84	4	53	1	...	...	...	...	...	...	30	24	7	...
Willoughby	42,520	1	...	51	2	59	2	...	...	...	...	...	...	32	15	1	2
Woollahra	34,740	1	...	49	...	38	1	1	1	...	...	...	...	26	5	7	2
EXTRA METROPOLITAN MUNICIPALITIES.†																	
Cabramatta and Canley Vale.	6,110	1	...	4	...	11	...	...	...	...	...	...	...	4	2	...	...
Fairfield	8,710	...	...	2	...	27	1	...	...	...	...	...	...	8	4	1	...
Holroyd (Guildford and Wentworth wards.)	7,490	...	...	30	...	21	2	...	...	...	...	1	...	...	2	1	...
Ingleburn	1,890	...	...	2	...	2	...	...	...	...	...	...	...	...	...	...	...
Liverpool.....	6,320	2	...	...	...	7	...	...	...	...	...	...	...	18	6	1	1
SHIRES.																	
Hornsby	22,600	...	...	26	...	25	3	...	...	...	...	...	...	12	17	...	1
Warringah	16,060	...	...	15	...	14	...	...	...	...	...	...	...	8	7	3	...
Harbour of Port Jackson.	.....	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	1,304,580	51	5	2,690	37	2,067	78	8	1	16	4	7	9	1,100	616	159	62

TABLE II.—Showing the number of notified cases of, and deaths from, Cerebro-spinal Fever (Meningococcal Meningitis), Diphtheria or Membranous Croup, Encephalitis Lethargica, Infantile Paralysis (Acute Anterior Poliomyelitis), Scarlet Fever, Typhoid Fever (including Paratyphoid), Pulmonary Tuberculosis, and Puerperal Infection in the HUNTER RIVER COMBINED DISTRICT, for the year ended 31st December, 1933.

Municipality or Shire.	Estimated Mean Population.	Typhoid and Paratyphoid.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Cerebro-spinal Meningitis.		Encephalitis Lethargica.		Pulmonary Tuberculosis.		Puerperal Infection.	
		C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
MUNICIPALITIES.																	
Adamstown.....	4,890	...	...	19	...	15	...	...	...	...	...	...	...	...	...	1	1
Carrington	3,240	...	...	10	...	4	...	...	...	...	...	...	...	3	1	...	...
Cessnock	14,400	1	1	5	...	33	3	...	...	...	...	...	...	4	4	...	1
Greta	1,380	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Hamilton.....	18,990	2	...	88	...	25	2	...	1	...	...	...	...	5	6	1	1
Lambton	4,400	...	...	64	...	6	...	...	...	...	...	...	...	1	...	...	...
Maitland, East ...	4,140	...	1	4	...	15	1	...	...	...	...	...	...	1	1	...	...
„ West ...	8,200	3	1	5	...	7	...	...	...	...	...	...	...	1	4	...	...
Merewether	8,070	3	...	17	1	9	...	...	...	...	...	...	...	5	...	...	...
Morpeth	1,040	7	2	...	...	4	...	...	...	...	...	...	...	...	...	...	...
Newcastle	13,670	1	...	40	...	23	1	...	...	...	...	...	...	13	8	...	...
New Lambton ...	6,320	...	...	47	1	15	...	...	...	...	...	...	...	2	1	...	1
Raymond Terrace	920	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Singleton	3,670	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Stockton	5,710	2	2	20	...	9	...	...	...	...	...	...	...	...	...	...	...
Wallsend	6,940	1	...	24	1	35	1	...	...	...	...	...	...	4	2	1	1
Waratah	20,320	...	...	71	2	29	2	...	...	...	...	...	...	2	4	4	...
Wickham.....	12,000	1	...	39	1	24	...	...	...	...	...	...	1	4	...	2	2
SHIRES.																	
Bolwarra	3,580	...	...	3	...	5	...	...	...	...	...	...	...	...	1	...	...
Kearsley	25,870	...	...	20	1	53	1	...	...	...	...	...	...	10	3	...	2
Lake Macquarie	29,590	1	...	112	2	75	3	...	...	...	...	...	...	15	6	1	1
Port Stephens.....	4,190	...	...	1	...	2	1	...	...	...	...	...	...	...	1	...	...
Tarro	9,440	4	...	14	...	9	...	...	...	...	...	...	...	2	4	...	...
Harbour of Port Hunter.	.....	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	210,970	29	7	604	9	397	15	...	1	...	...	...	1	72	47	10	10

TABLE III.—Showing the number of notified cases of, and deaths from, Cerebro-spinal Fever (Meningococcal Meningitis), Diphtheria or Membranous Croup, Encephalitis Lethargica, Infantile Paralysis (Acute Anterior Poliomyelitis), Scarlet Fever, Typhoid Fever (including Paratyphoid), Pulmonary Tuberculosis, and Puerperal Infection in the REMAINDER OF STATE for the year ended 31st December, 1933.

Municipality.	Estimated Mean Population.	Typhoid and Paratyphoid.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Cerebro-spinal Meningitis.		Encephalitis Lethargica.		Pulmonary Tuberculosis.		Puerperal Infection.	
		C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
MUNICIPALITIES.																	
Aberdeen	960	...	...	2	...	1	...	...	...	...	...	...	...	...	...	...	...
Albury	10,560	2	...	3	...	47	2	...	...	...	...	...	...	...	3	...	1
Armidale	6,800	...	...	7	...	26	...	...	...	1	...	...	...	1	2	...	1
Ballina	3,050	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Balranald	1,260	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Barraba	1,430	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...
Bathurst	10,420	...	...	48	...	1	...	...	...	...	...	...	...	1	6	5	...
Bega.....	2,280	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
Berry	2,630	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Bingara	1,450	...	...	1	...	29	...	...	...	...	...	...	...	1	...	1	...
Blackheath	1,430	...	...	2	...	...	...	...	...	...	...	...	...	1	...	...	...
Blayney	1,600	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...
Bombala	930	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bourke.....	1,790	...	...	2	...	...	1	...	...	...	...	...	...	1	1	...	...
Bowral	3,020	...	...	6	...	...	...	...	...	...	...	...	...	8	2	...	...
Braidwood	1,070	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Brewarrina	810	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Broken Hill.....	26,930	8	2	31	...	27	2	...	...	...	...	...	...	23	17	5	3
Broughton Vale	330	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Burrowa	1,510	...	...	...	...	2	...	...	...	...	...	...	...	...	1	...	...
Camden	2,400	...	...	...	...	1	...	...	...	...	...	...	...	1	1	...	...
Campbelltown ...	2,840	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	...
Carcoar	470	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...
Casino	5,300	...	...	...	...	7	...	...	...	...	...	...	...	1	...	...	...
Castlereagh	1,130	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...
Cobar	1,160	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Condobolin	2,580	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...
Cooma	1,970	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...
Coonamble	2,720	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1
Cootamundra	4,690	...	...	4	...	19	...	...	...	...	...	...	...	1	3	1	...
Coraki	1,230	...	...	...	...	6	2	...	...	...	...	...	...	...	...	...	...
Corowa	2,760	...	...	...	...	13	1	...	...	...	...	...	...	1	1	...	...
Cowra	5,060	...	...	3	...	4	...	...	...	...	...	...	...	2	1	...	1

REMAINDER OF STATE.—Return showing the number of Cases, etc., from Country Municipalities—*continued.*

Municipality.	Estimated Mean Population.	Typhoid and Paratyphoid.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Cerebro-spinal Meningitis.		Encephalitis Lethargica.		Pulmonary Tuberculosis.		Puerperal Infection.	
		C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
MUNICIPALITIES—continued.																	
Deniliquin	3,190	2	...	2	...	2	...	...	...	...	...	...	...	1	...	...	...
Dubbo	8,350	...	...	4	...	36	2	...	...	...	...	...	...	1	1	...	...
Dungog	2,130	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...
Forbes	5,360	3	1	8	...	1	...	...	...	...	...	...	...	...	4	...	...
Gerrington	860	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...
Glen Innes	5,360	1	...	16	...	18	2	...	...	...	...	...	...	1	1	...	...
Goulburn	14,860	...	...	15	...	130	8	...	...	...	...	...	...	...	4	...	1
Grafton	6,420	...	...	3	...	7	...	...	...	...	...	...	...	2	2	...	...
Grafton South ...	2,140	...	...	...	...	10	...	...	...	...	...	...	...	2	1	1	...
Grenfell	2,490	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Gulgong	1,720	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gunnedah	3,610	...	...	6	...	16	...	...	...	...	...	...	...	...	...	...	...
Hay	3,160	...	...	3	...	...	...	...	...	...	...	...	...	1	1	...	...
Hillston	1,140	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Illawarra Central	8,660	...	...	4	...	18	...	...	...	...	...	...	...	4	2	...	...
„ North	7,780	...	...	1	...	18	...	...	...	1	...	...	...	4	6	1	1
Inverell	5,310	...	...	...	...	5	2	...	...	...	...	...	...	...	...	...	...
Jamberoo	1,100	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Junee	4,210	...	...	7	...	7	...	...	...	...	...	...	...	1	...	1	1
Katoomba	6,450	...	...	7	1	2	...	...	...	...	...	...	...	10	10	...	...
Kempsey	4,830	...	...	9	...	6	...	...	...	...	...	...	...	...	2	...	...
Kiama	2,430	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Lismore	11,770	...	...	12	...	23	1	...	...	...	...	...	...	3	2	...	1
Lithgow	13,450	1	...	72	...	6	...	...	...	...	...	1	...	5	3	1	1
Macleay	1,590	...	...	...	...	3	...	...	...	...	...	...	...	2	...	1	...
Manilla	1,780	...	...	...	...	1	...	...	...	...	...	...	...	1	...	1	...
Mittagong	1,760	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Moama.....	780	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...
Molong.....	1,530	...	...	2	...	...	...	...	...	...	...	...	...	...	1	...	...
Moree	4,360	4	1	5	...	13	...	...	...	...	...	...	...	4	3	...	...
Moss Vale	Amalgamated with Wingecarribee Shire as from 1st February, 1933.																
Mudgee	4,000	2	1	2	...	2	1	...	...	...	...	...	...	6	2	1	...
Mullumbimby ...	1,360	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murrumburrah ...	2,850	...	...	1	...	13	2	...	...	...	...	...	...	6	...	...	...
Murrumbidgee ...	1,250	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...
Murwillumbah ...	3,900	...	...	5	...	11	...	...	...	...	...	...	...	...	1	...	...
Muswellbrook ...	3,290	...	...	1	...	25	...	...	...	...	...	...	...	...	3	...	...
Narrabri	2,920	...	...	1	...	3	...	...	...	...	...	...	...	...	1	1	...
Narrabri West ...	1,030	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...
Narrandera	4,110	1	...	5	...	13	...	...	...	...	...	...	...	1	...	1	...
Narromine	1,620	...	...	5	...	...	...	...	...	...	...	...	...	1	...	...	...
Nowra	2,990	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	...
Nyngan	1,540	...	...	6	...	...	...	...	...	...	...	...	...	...	2	...	...
Orange	9,640	...	...	10	...	7	...	...	...	...	...	...	...	8	3	...	...
Parkes	5,850	2	...	3	...	4	...	1	...	...	...	...	...	2	4	...	...
Peak Hill.....	1,230	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Penrith	3,920	...	...	5	...	3	...	...	...	...	...	...	...	7	2	...	...
Pieton	1,040	...	...	...	...	1	...	...	...	...	...	...	...	2	...	...	...
Port Macquarie ...	1,740	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Queanbeyan	4,020	...	...	5	...	1	...	...	...	...	...	...	...	...	...	...	...
Quirindi	2,590	...	...	1	...	1	...	...	...	...	...	...	...	1	2	...	...
Richmond	2,350	...	...	2	...	4	...	...	...	...	...	...	...	...	1	...	...
Scone	2,180	...	...	3	...	14	1	...	...	...	...	...	...	1	...	...	...
Shellharbour	1,890	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...
Shoalhaven South	820	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
St. Marys	2,820	...	...	25	1	7	...	...	...	...	...	...	...	1	...	...	...
Tamworth	9,920	...	...	5	...	50	5	...	...	...	...	...	...	1	2	1	1
Taree	4,590	...	...	...	...	14	...	...	...	...	...	...	...	4	2	1	...
Temora	3,830	...	...	4	...	1	...	...	...	...	...	...	...	...	...	1	1
Tenterfield	2,630	...	...	6	...	3	...	...	...	...	...	...	...	1	1	...	...
Ulladulla	1,420	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...
Ullmarra	1,990	...	...	...	...	7	...	...	...	1	...	...	...	...	...	...	...
Uralla	1,060	3	...	2	...	3	...	...	...	...	...	...	...	1	1	...	...
Wagga Wagga ...	11,630	...	...	41	...	10	...	...	...	...	...	1	...	6	5	1	...
Walcha	1,520	...	...	18	1	...	...	...	...	...	...	...	...	...	...	...	...
Wallendbeen	650	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Warren	1,570	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	1
Wellington	4,320	...	...	1	...	4	...	...	...	...	...	...	...	1	...	1	...
Wentworth	840	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wileannia	630	...	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...
Windsor	3,250	...	...	...	1	1	1	...	...	...	...	...	...	2	1	...	...
Wingham	1,610	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wollongong.....	11,400	...	...	7	...	6	...	...	...	...	...	...	...	4	1	...	...
Wyalong	960	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Yass	2,870	...	...	2	...	3	1	...	...	...	...	...	...	1	1	...	...
Young	4,010	2	...	5	...	6	1	...	...	...	...	...	...	1	1	...	...
Total, Municipalities....	394,800	35	6	477	4	749	35	...	1	4	...	...	2	148	123	29	16

REMAINDER OF STATE.—Return showing the number of Cases, &c., from Country Shires.

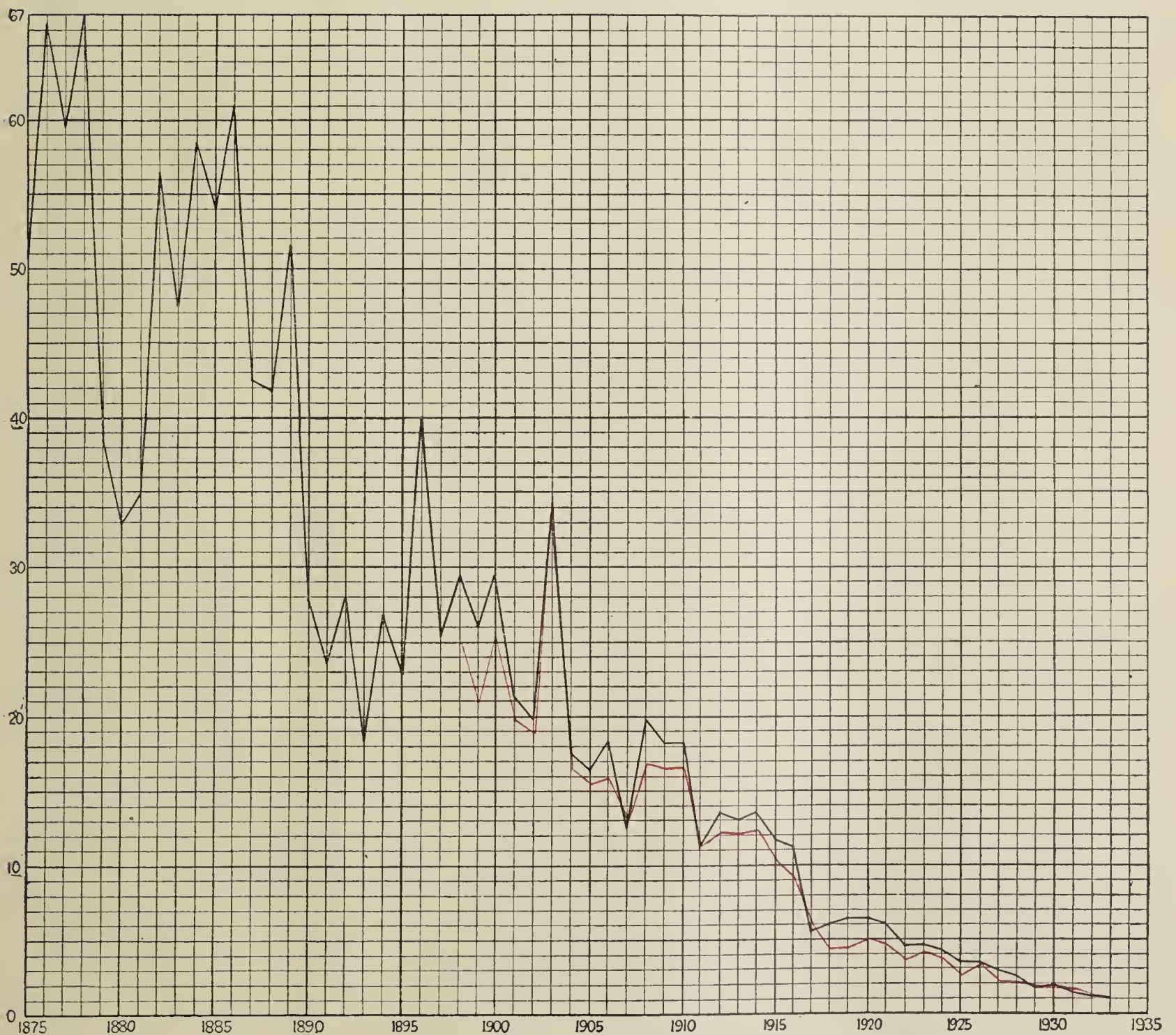
Shire.	Estimated Mean Population.	Typhoid and Paratyphoid.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Cerebro-spinal Meningitis.		Encephalitis Lethargica.		Pulmonary Tuberculosis.		Puerperal Infection.	
		C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
SHIRES.																	
Abercrombie	4,260	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Amaroo	2,900	...	...	...	...	4	1	...	...	...	...	...	...	...	...	...	...
Apsley	2,930	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...
Ashford	3,820	...	...	...	...	2	...	...	...	...	...	...	...	...	1	...	...
Bannockburn	3,390	...	...	3	...	3	...	...	...	...	...	...	...	...	...	...	...
Barraba	2,120	...	...	...	...	4	...	1	1	...	...	...	...	...	...	...	...
Baulkham Hills ...	8,080	...	...	6	...	1	...	...	...	...	...	...	...	2	3	...	...
Bellingen	6,080	...	...	3	...	7	...	...	...	...	...	...	...	1	2	...	1
Berrigan	4,510	...	...	1	...	3	...	...	...	1	...	...	...	2	1	...	...
Bibbenluke	2,960	...	...	2	...	16	...	...	...	...	...	...	...	...	...	2	...
Blacktown	13,730	1	...	5	...	28	1	...	...	...	...	1	...	8	5	1	...
Bland	11,170	1	1	6	...	2	...	...	...	...	...	...	...	3	1	...	...
Blaxland	8,670	...	...	19	...	2	1	...	...	...	...	...	...	2	2	...	...
Blue Mountains ...	6,850	...	...	6	...	3	...	...	...	...	...	...	...	40	16	...	...
Bogan	1,910	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...
Boolooroo	3,460	6	1	2	1	3	...	...	...	...	...	...	...	...	...	1	...
Boomi	3,160	...	...	2	...	2	...	...	...	...	...	...	...	...	...	...	...
Boree	6,810	...	...	1	...	7	...	...	...	...	...	...	...	...	3	1	...
Bulli	15,030	...	...	15	...	37	...	...	...	...	...	...	...	11	12	...	1
Burrangong.....	5,880	1	...	6	...	12	1	...	...	...	...	...	...	...	...	...	...
Byron	7,950	...	...	1	...	4	1	...	...	...	...	...	...	1	3	...	...
Cambewarra	1,180	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Canobolas	8,900	...	1	2	...	1	1	...	...	1	...	...	...	...	4	...	...
Carrathool	5,760	1	...	7	...	4	...	1	...	...	...	...	...	...	...	1	...
Clyde	1,930	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...
Cobborah.....	5,300	...	...	...	...	4	...	...	...	...	...	...	...	...	1	...	...
Cockburn.....	4,970	...	...	2	...	6	...	...	...	...	...	...	...	...	1	...	...
Colo	5,270	...	...	9	...	...	...	...	...	...	...	...	...	1	...	...	...
Conargo	1,160	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Coolah	2,120	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Coolamon	7,110	...	...	...	...	6	...	...	...	...	...	...	...	...	...	3	...
Coonabarabran ...	6,770	...	...	3	...	8	1	...	...	...	...	...	...	...	3	...	...
Copmanhurst	3,400	...	...	1	...	6	...	...	...	...	...	...	...	...	1	...	...
Coreen	3,320	...	...	1	...	23	...	...	...	...	...	...	...	...	...	...	...
Crookwell	6,400	...	...	12	...	17	1	...	...	...	...	...	...	1	2	1	...
Cudgegong	5,800	...	...	5	...	...	...	...	...	...	...	...	...	...	2	...	1
Culcairn	5,430	...	1	8	...	9	...	...	...	...	...	...	...	...	1	1	...
Dalgety	3,580	...	...	1	...	1	...	...	...	...	...	...	...	...	1	...	...
Demondrille	3,290	1	...	1	...	2	...	...	...	...	...	...	...	1	1	...	...
Dorrigo	10,610	...	...	...	...	7	...	...	...	...	...	...	...	1	1	...	2
Dumaresq	4,380	...	...	1	...	7	...	...	...	...	...	...	...	...	...	...	...
Erina	17,240	...	...	8	...	6	1	...	...	...	...	...	...	7	7	1	...
Eurobodalla	5,240	...	1	...	...	3	...	...	...	...	...	...	...	2	6	...	...
Gilgandra	5,450	...	...	52	...	11	...	...	...	...	...	...	...	1	1	...	...
Gloucester	4,420	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
Goobang	6,730	...	...	1	...	...	...	...	...	...	...	...	...	1	2	...	...
Goodradigbee ...	3,590	1	...	4	...	3	...	...	...	...	...	...	...	1	...	...	...
Gostwyck	4,250	1	...	4	...	9	2	...	...	...	...	...	...	...	...	...	...
Gundagai.....	5,300	1	...	...	...	4	...	...	...	...	...	...	...	...	...	...	1
Gundarimba	4,610	...	...	1	...	6	...	...	...	1	...	...	...	1	...	...	...
Gunning	3,140	...	...	...	...	2	1	...	...	...	...	...	...	...	1	...	...
Guyra	6,620	...	...	24	...	6	1	...	...	...	...	...	...	...	1	1	...
Gwydir	1,790	...	...	2	...	2	...	...	...	...	...	...	...	...	1	...	...
Harwood	4,630	...	...	2	...	8	3	1	...	...	...	...	...	...	...	...	...
Hastings	9,290	...	...	2	...	1	1	...	...	...	...	...	...	...	2	...	...
Holbrook	2,640	...	...	7	...	1	...	...	...	...	...	...	...	1	...	...	...
Hume	5,330	3	1	1	...	30	...	...	...	...	...	...	...	...	2	...	...
Illabo	2,900	1	...	5	...	5	...	...	...	...	...	...	...	...	1	...	...
Imlay.....	4,810	...	...	...	...	4	...	...	...	...	...	...	...	...	2	...	...
Jemalong.....	4,340	...	...	2	...	...	...	...	...	...	...	...	...	...	2	...	...
Jerilderie	1,770	...	...	5	...	...	...	...	...	...	...	...	...	1	...	...	...
Jindalee	1,940	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...
Kycamba	4,550	...	...	8	...	2	...	...	...	...	...	...	...	...	...	...	...
Kyogle	11,390	1	...	2	1	15	1	1	...	1	1	...	...	...	3	...	...
Lachlan	8,110	1	3	2	...	...	...	...	...	...	...	1	...	2	1	...	...
Liverpool Plains...	5,270	2	1	7	...	13	...	...	...	...	...	...	...	...	2	...	1
Lockhart	5,540	...	...	11	...	3	...	...	...	...	...	...	...	...	1	...	...
Lyndhurst	5,330	...	...	1	...	6	1	...	...	...	...	...	...	...	...	...	...
Mcintyre	1,630	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Macleay	8,640	...	...	8	...	6	...	...	...	...	...	...	...	1	3	...	...
Macquarie	4,540	1	...	...	...	3	...	...	...	...	...	...	...	...	1	...	...
Mandowara.....	1,920	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Manning	14,120	1	...	...	...	8	2	...	...	...	...	...	...	1	2	...	...
Marthaguy	2,190	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Merriwa	3,070	...	...	4	...	32	1	...	...	...	...	...	...	...	...	...	...
Mitchell	4,110	...	...	6	...	2	2	...	...	...	...	...	...	...	...	...	...
Monaro	2,630	...	...	2	...	4	1	...	...	...	...	...	...	...	...	...	...
Mulwaree.....	7,270	...	...	2	...	24	2	...	...	...	...	...	...	...	1	1	...
Mumbulla	4,610	...	...	...	...	6	1	...	...	...	...	...	...	1	2	...	...
Murray	3,140	...	...	1	...	1	...	1	...	...	...	...	...	...	2	...	...
Murrumbidgee ...	830	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Murrungal	2,620	...	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...

TYPHOID FEVER.

Annual Death Rate, New South Wales, per 100,000 of the Population, 1875-1933.

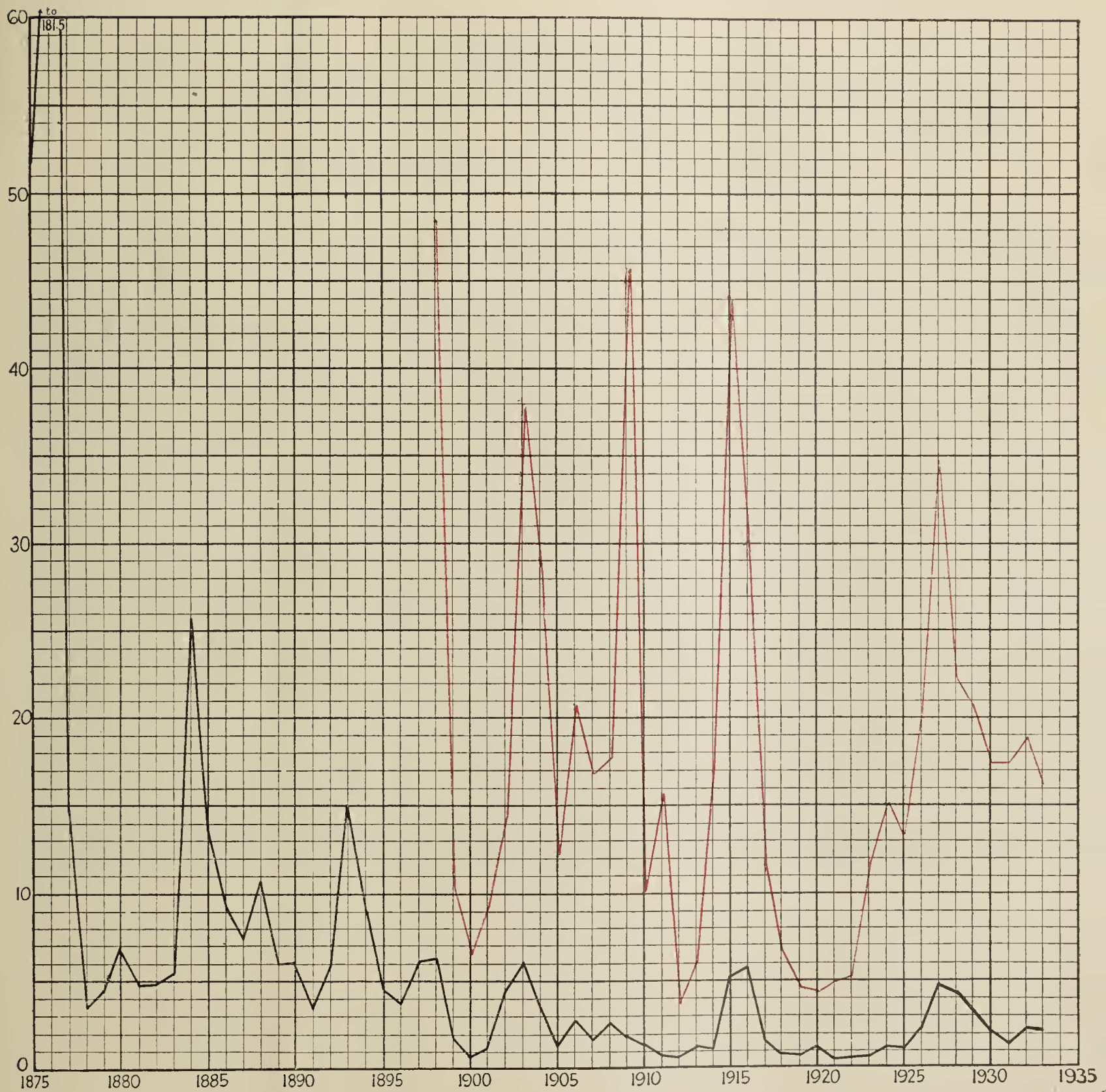
„ Case „ „ „ „ 10,000 „ „ 1898-1933.

Death Rate—BLACK Line. Case Rate—RED Line.



SCARLET FEVER.

Annual Death Rate, New South Wales, per 100,000 of the Population, 1875-1933.
 „ Case „ „ „ „ 10,000 „ „ 1898-1933.
 Death Rate—BLACK Line. Case Rate—RED Line.



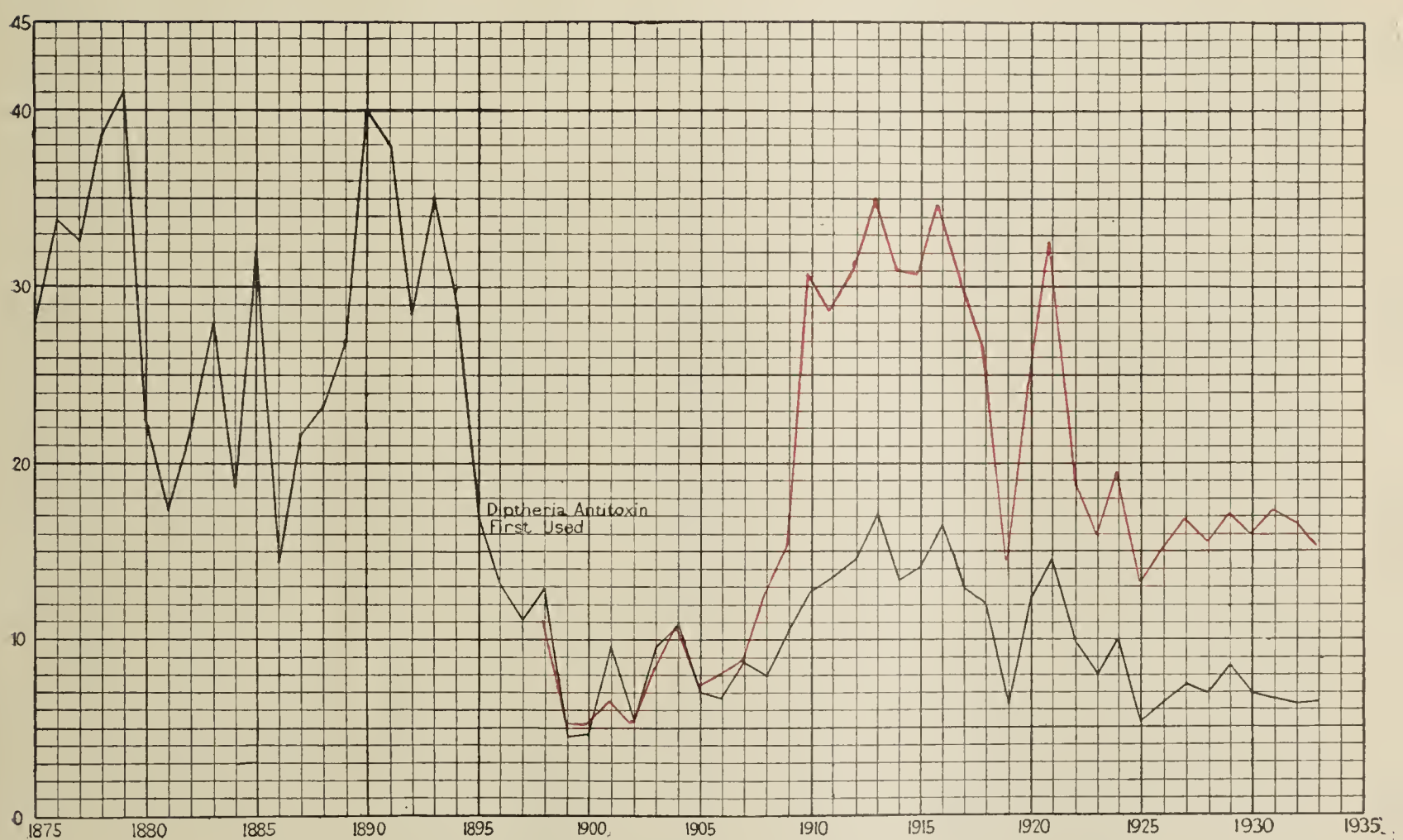
DIPHTHERIA.

Annual Death Rate, New South Wales, per 100,000 of the Population, 1875-1933.

„ Case „ „ „ „ „ 10,000 „ „ 1898-1933.

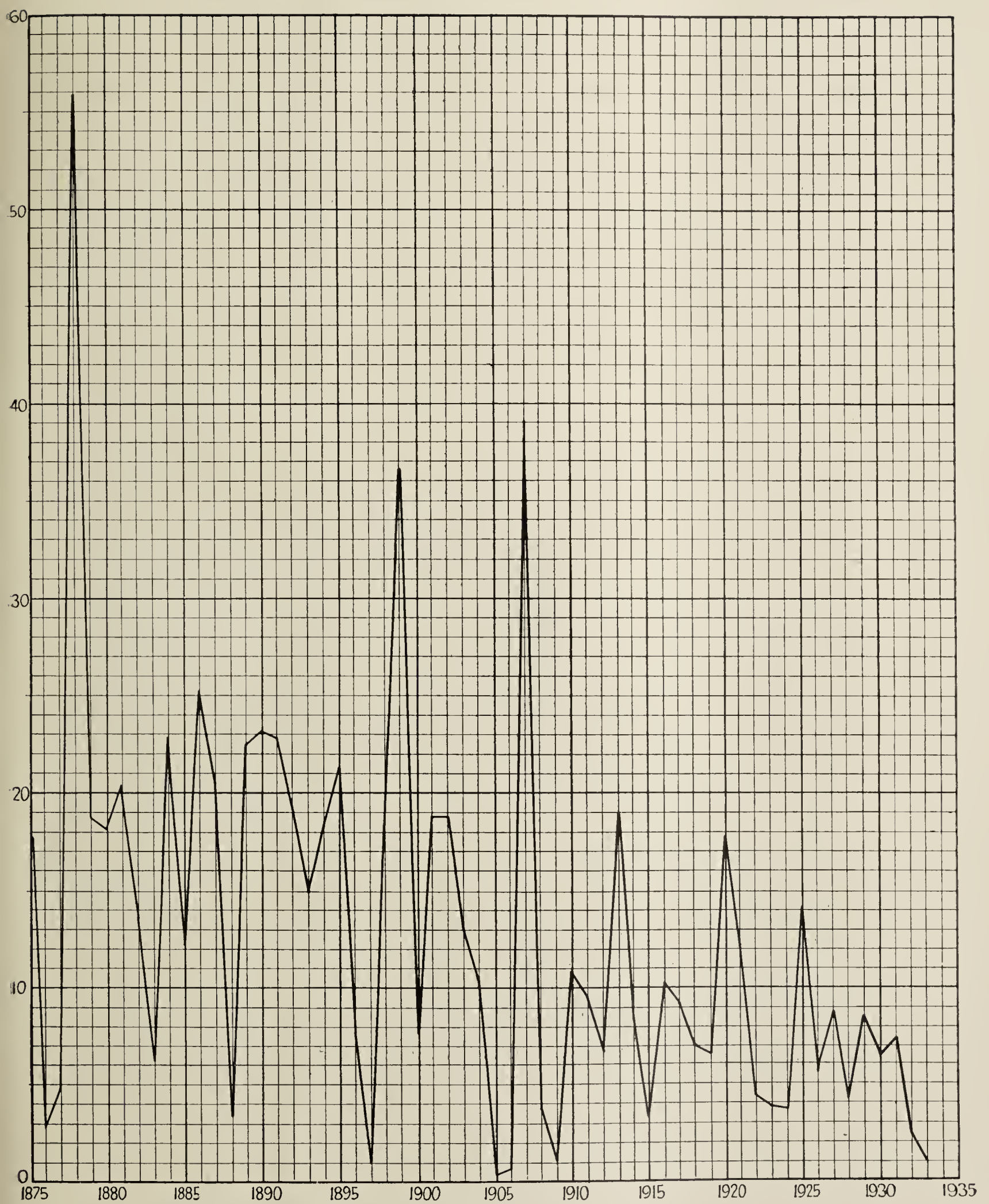
Death Rate—BLACK Line.

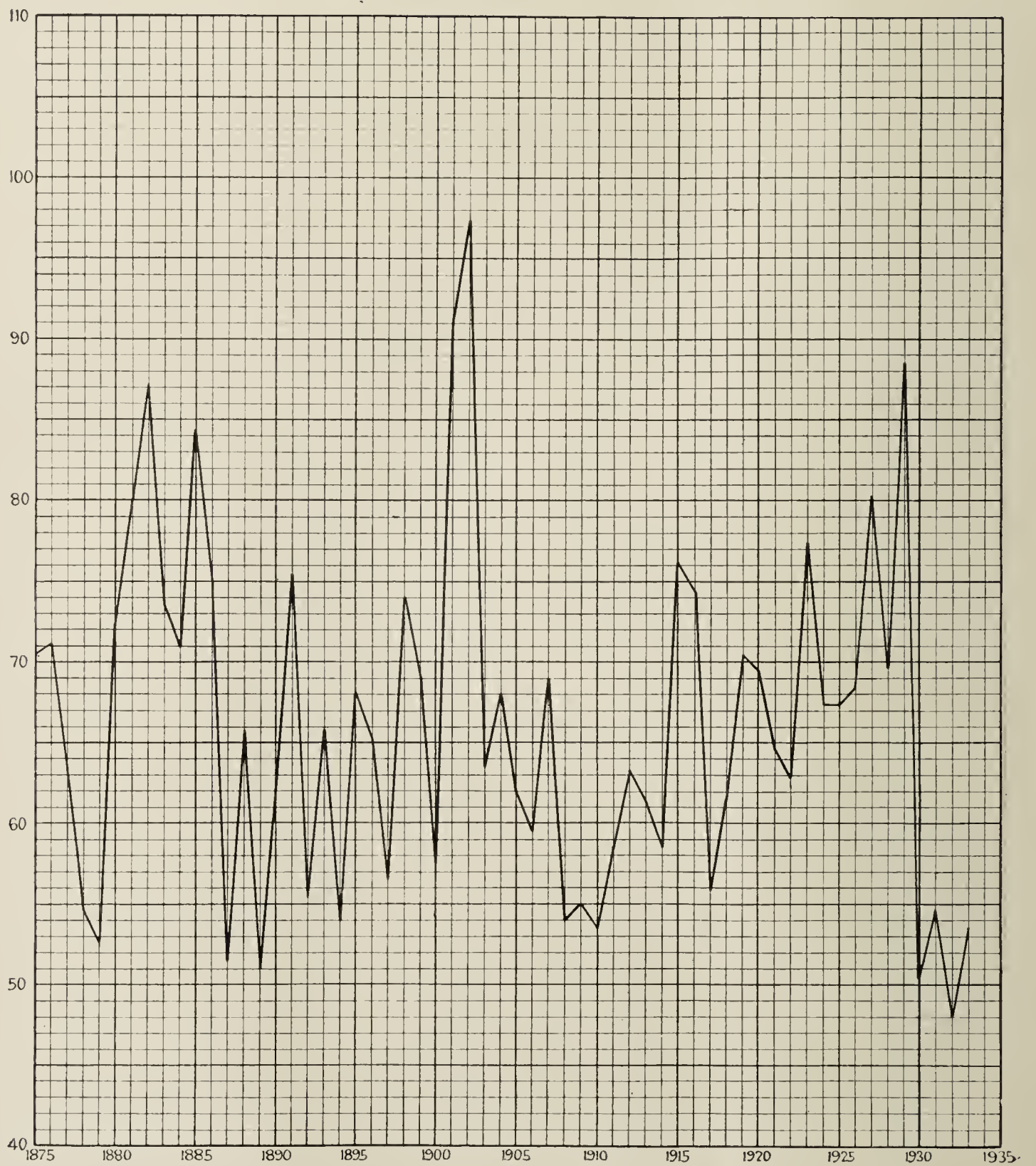
Case Rate—RED Line.



WHOOPIING COUGH.

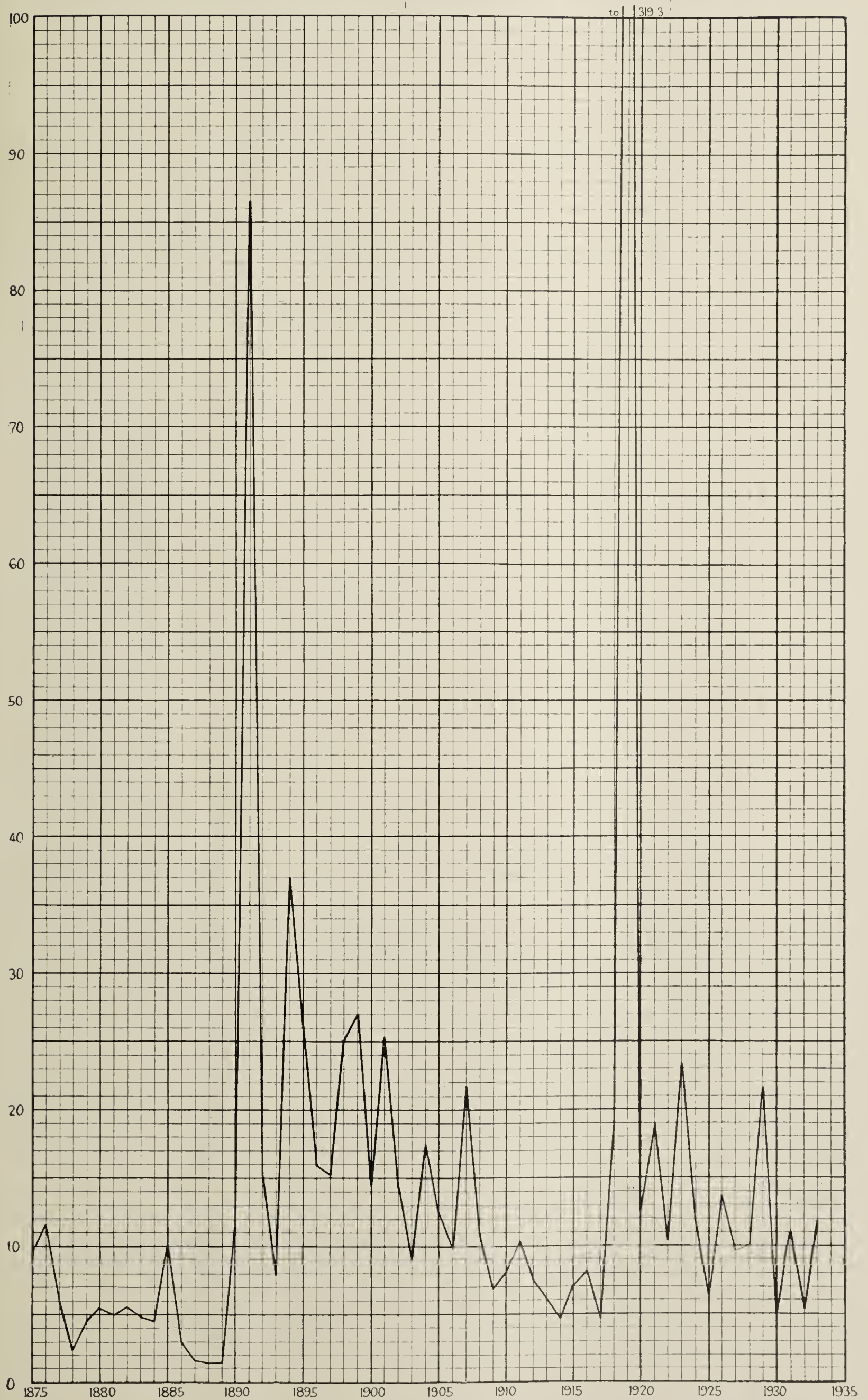
Annual Death Rate per 100,000 of the Population in New South Wales, 1875-1933.



PNEUMONIA.**Annual Death Rate per 100,000 of the Population in New South Wales, 1875-1933.**

INFLUENZA.

Annual Death Rate per 100,000 of the Population in New South Wales, 1875-1933.



SUMMARY, 1933.

District.	Typhoid Fever.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Cerebro-spinal Meningitis.		Encephalitis Lethargica.		Pulmonary Tuberculosis.		Puerperal Infection.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Metropolitan Combined Sanitary District	51	5	2,690	37	2,067	78	8	1	16	4	7	9	1,100	616	159	62
Hunter River Combined Sanitary District	29	7	604	9	397	15	...	1	...	...	...	1	72	47	10	10
Broken Hill District	8	2	31	...	27	...	...	...	...	...	...	...	23	17	5	3
Remainder of State—																
Municipalities	27	4	446	4	722	39	...	1	4	...	...	2	125	106	24	13
Shires	68	10	486	5	688	32	5	1	4	1	4	2	120	160	21	12
Police Districts	5	...	2	...	11	...	...	...	...	...	...	1	1	5	3	...
Lord Howe Island .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	188	28	4,259	55	3,912	169	13	4	24	5	11	15	1,441	951	222	100

TABLE IV.—Showing the number of Cases of Infectious Diseases notified in the State of New South Wales during the years 1898 to 1933, inclusive, and the number of deaths therefrom.

Year.	Population.	Typhoid Fever.*		Scarlet Fever.*		Diphtheria.*		Plague.†		Infantile Paralysis.‡		Cerebro-spinal Meningitis.§		Encephalitis Lethargica.		Pulmonary Tuberculosis.¶		Puerperal Infection.**	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
1898	1,323,130	3,302	387	6,342	83	1,493	169	...	...	...	...	...	...	...	...	...	...	...	...
1899	1,344,080	2,783	347	1,389	25	741	60	...	...	...	...	...	...	...	...	...	...	...	...
1900	1,364,590	3,442	398	895	9	726	63	303	103	...	...	...	...	...	...	...	...	...	...
1901	1,376,199	2,702	291	1,288	16	922	131	...	...	...	...	...	...	...	...	...	...	...	...
1902	1,397,858	2,624	276	2,010	61	757	74	140	41	...	...	...	...	...	...	...	...	...	...
1903	1,416,879	4,855	475	5,358	87	1,214	134	2	...	...	...	...	...	...	...	...	...	...	...
1904	1,440,919	2,370	249	4,056	50	1,584	156	12	6	...	...	...	...	...	...	146	...	...	...
1905	1,469,153	2,226	239	1,773	21	1,118	102	56	21	...	...	...	...	...	...	128	...	...	...
1906	1,498,609	2,373	271	3,085	42	1,219	100	20	8	...	...	...	...	...	...	118	...	...	...
1907	1,531,980	1,972	189	2,570	26	1,376	133	51	20	...	...	...	...	...	...	161	...	...	...
1908	1,560,026	2,607	307	2,755	40	2,001	123	6	3	...	...	...	...	...	...	112	...	...	...
1909	1,596,685	2,615	287	7,178	30	2,419	166	24	7	...	...	...	...	...	...	196	...	...	...
1910	1,638,220	2,714	294	1,642	23	4,989	207	...	...	...	...	...	...	...	...	184	...	...	...
1911	1,698,735	1,864	184	2,618	11	4,784	226	...	...	...	...	...	...	...	...	222	...	...	...
1912	1,778,962	2,126	236	662	11	5,440	253	...	...	...	...	...	...	...	...	265	...	...	...
1913	1,832,546	2,187	236	1,120	23	6,380	310	...	...	47	10	...	...	...	...	228	...	...	...
1914	1,862,028	2,284	250	3,207	21	5,831	247	...	...	79	14	...	...	...	...	293	...	...	...
1915	1,868,644	1,941	219	8,335	97	5,838	264	...	...	63	11	50	33	...	...	361	86	...	...
1916	1,846,736	1,742	209	5,759	107	6,588	309	...	...	311	21	309	145	...	...	1,499	666	...	...
1917	1,886,701	1,091	103	2,255	27	5,805	247	...	...	16	12	197	98	...	...	1,319	584	...	...
1918	1,928,174	810	112	1,308	15	5,151	221	...	...	50	12	120	80	...	...	1,308	586	...	...
1919	2,000,173	857	106	959	10	2,826	114	...	...	8	3	28	23	...	...	1,102	678	...	...
1920	2,099,763	1,016	132	937	24	5,043	263	...	...	45	10	34	27	...	...	1,509	674	...	...
1921	2,128,786	949	129	1,060	8	6,854	306	2	1	184	22	30	28	...	...	1,240	791	...	...
1922	2,174,688	706	99	1,153	11	4,094	207	33	9	33	5	21	22	...	...	1,045	517	...	...
1923	2,211,106	873	104	2,623	13	3,480	176	1	1	104	8	27	22	...	...	1,218	657	...	...
1924	2,256,649	768	97	3,421	29	4,364	222	...	...	108	6	29	38	...	...	1,096	730	...	...
1925	2,300,081	533	80	3,043	27	3,004	118	...	...	57	14	37	27	...	...	1,195	617	...	...
1926	2,349,401	698	80	4,755	53	3,579	147	...	...	81	21	32	23	...	...	1,265	705	...	...
1927	2,401,884	460	68	8,369	113	4,059	179	...	...	25	4	25	10	3	27	1,158	632	...	...
1928	2,446,874	453	60	5,531	105	3,835	168	...	...	30	2	31	8	18	23	1,212	815	...	...
1929	2,479,147	438	45	5,219	78	4,274	215	...	...	241	29	28	10	26	30	1,215	1,152	44	79
1930	2,502,039	380	48	4,400	54	4,051	176	...	...	30	6	43	12	14	20	1,917	1,022	269	82
1931	2,519,300	340	35	4,477	36	4,432	168	...	...	103	10	30	9	20	16	1,588	1,014	319	83
1932	2,542,034	233	31	4,905	57	4,310	160	...	...	384	44	43	7	12	18	1,485	969	292	59
1933	2,613,776	188	28	4,259	55	3,912	169	...	...	13	4	24	5	11	15	1,441	951	222	100

* Notifiable from 1st January, 1898.
† „ 23rd January, 1900.
‡ „ 1st February, 1912. Proclamation re-issued 14th August, 1931.
§ „ 1st April, 1926.
|| „ 11th October, 1915.
¶ 1904, city of Sydney only; from 1915, Metropolitan, Hunter River Districts; from 1916, Blue Mountain Districts.
Notification extended to whole State, March, 1929.
** 16th August, 1929.

GRAPHS.

Typhoid Fever } Annual Death-rate per 100,000 (1875-1933) and case rate per 10,000
Scarlet Fever } of population (1898-1933).
Diphtheria ... }
Whooping Cough } Annual Death-rate per 100,000 of population in New South Wales,
Pneumonia ... } 1875-1933.
Influenza ... }

AN OUTBREAK OF TYPHOID FEVER AT A RELIGIOUS CONVENTION PROBABLY CAUSED BY A "CARRIER."

By E. SYDNEY MORRIS, Senior Medical Officer of Health.

For some ten or twelve years an annual religious gathering or convention has been held by a religious sect, known as Followers of Christ, at Wattamondara, about 6 miles from Cowra on a branch of the main western railway line.

In 1933 the Convention was held from 9th to 12th February at the farm which had been the usual meeting place in previous years. Here some 300 adults (125 males and 175 females) from various parts of the State, together with a number of children, assembled for the Convention.

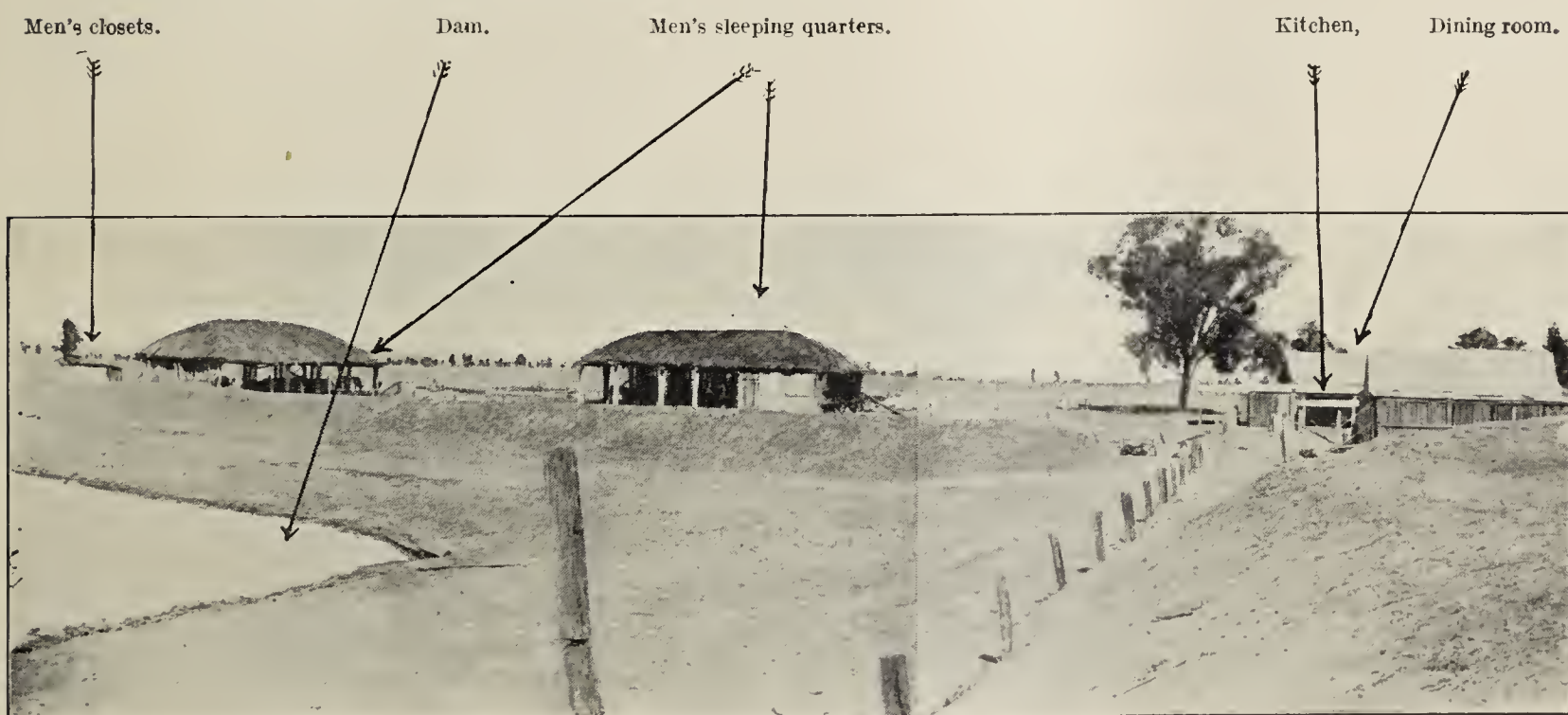
The local authority (Waugoola Shire) was not aware of the gathering which, under ordinary circumstances, would have dispersed, as in previous years, without any untoward incident directing attention to the adherents of the sect. As a matter of fact, the Convention had terminated, and the adherents had returned to their homes at widely-scattered points of the State without any suspicion of sickness among the individual members of the group. Shortly afterwards, however, thirty-three of the adherents were notified as suffering from typhoid fever, of whom nine died.

Course of the Epidemic.—The first intimations of the epidemic received by this department were notifications received from widely-scattered points of the State. The first notification was received on 9th March, 1933, and between this date and 10th April, 1933, thirty-three notifications of the disease were forwarded by local authorities situated in an area bounded by Sydney and Albury in the north and south, and Narooma and Molong in the east and west respectively, an area roughly of more than 4,000 square miles.

The association of these scattered cases with the religious gathering was not noticed until a number of notifications, which mentioned attendance at the religious convention a few weeks previously, were received. Steps were immediately taken to investigate the cause of the outbreak and to ascertain, if possible, the part played by the religious convention in connection therewith.

Dr. Dunn (Assistant Medical Officer of Health) and Mr. G. Eldershaw (Sanitary Inspector) proceeded to Wattamondara to investigate the conditions at the farm where the Convention had been held, and to ascertain other essential facts which would throw light upon the outbreak.

Description of Site and Accommodation: (a) Sleeping Quarters.—The male and female sleeping quarters were separated by a distance of about 200 yards, and consisted of the following structures: A cart shed and a stable had been converted into male sleeping quarters in which beds were provided by stretching wire between beams so as to arrange the beds in two tiers. Mattresses of chaff bags filled with straw were provided as bedding. Prior to the Convention, these buildings had been thoroughly cleaned of all manure, etc. The female sleeping quarters consisted of a wooden shed about 40 feet by 30 feet, with slab boards butted together and nailed to a wooden framework. The roof was galvanised iron, which drained to a water storage tank. A wooden floor was provided. The second women's quarters were situated about 200 yards northerly from the first and were of similar construction. Further accommodation was provided by tents situated near the first-mentioned women's quarters.



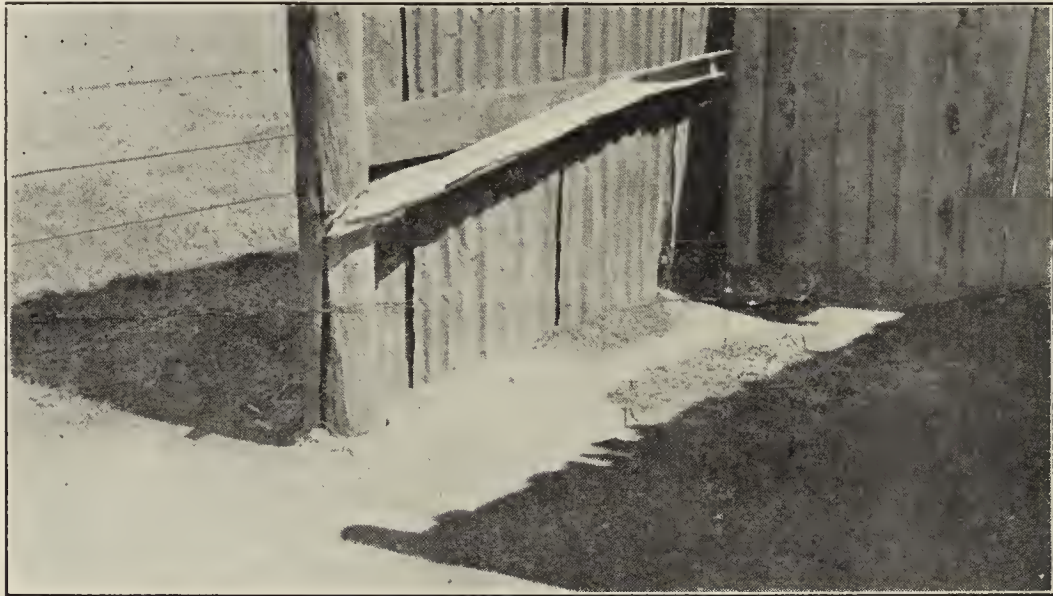
Panorama of the Site.

(b) Closets.—The women's closet was situated about 120 feet from the main sleeping quarters, and consisted of a wooden structure 20 feet by 6 feet, with galvanised iron roof and natural earth floor. The walls were rough boards butted together with open joints. A full width seat with full riser, and fitted with a range of seven openings was placed over a cesspit 2 ft. 6 in. wide and 5 feet deep. Lids to the seat openings were absent, whilst cracks in the seat and riser also permitted the access of light and flies to the cesspit. The seat was subdivided into compartments by means of screens of hessian or bags. Five tins of dry earth were kept in the closet, and it was the duty of one of the women to place disinfectant (diluted phenol preparation) in the cesspit in the early morning and late at night. It was rarely used during the day time.

The men's closet was constructed similarly to the women's, the seat being provided with five openings. In addition to the closet, a so-called urinal was provided. This consisted of a bent and torn eave gutter nailed to the wooden crosspiece of a galvanised iron screen. No roof was provided, and the floor was natural earth. A receptacle was placed at the lower end of the inclined gutter, and its contents were alleged to have been distributed over the ground and cultivation paddock about 1 chain distant from the urinal. There was no apron to prevent the soiling of the urinal's surroundings.

From this brief description it will be seen that the conveniences themselves, and the method of disposal of excreta, were extremely insanitary.

Water Supply.—The water for domestic purposes was obtained from roof catchment tanks, but there were no facts pointing to this water as a probable source of infection. At the farm also were two dams—a large one for storage and a smaller one for sedimentation purposes. The water from these dams was not used for domestic purposes, but the larger of the two dams was used for the immersion of converts to the sect as part of a religious ceremony.



Men's urinal.

It was definitely decided that no pollution from closets or similar source reached the dams, and since none of the converts who were immersed in the water contracted typhoid fever, it was felt that the dams could be ruled out as a causative factor.

Food Supply.—All members of the Convention dined in one shed, but owing to the number to be served the meals were arranged in two sessions.



Open cooking place.

The shed, about 40 ft. by 40 ft., was subdivided into a dining portion (40 ft. by 15 ft.), and a meeting room (40 ft. by 25 ft.) by a canvas screen. The floor was natural earth. Nearby was an open shed, used as a kitchen or cook-house, and a little further away a serving and carving room, which were provided with wooden floors. All these structures were primitive, and offered every opportunity for contamination of the food by flies and dust. The food was prepared, handled, or served by a large number of persons, who undertook these duties in rotation, so that the difficulty of ascertaining whether any was a "carrier" seemed overwhelming.

The milk supply was provided locally, and was stated to have been scalded. Most of the milk was consumed by the children, none of whom became infected.

Epidemiological Investigation.—At the outset it was clearly recognised that conditions of the camp would facilitate the spread of infection from any individual or source present among the religious adherents.

Clearly, the outbreak was not water-borne, as the number infected was too small. The weather was hot, and it was assumed that water would be taken fairly freely. In such circumstances, a large fulminating outbreak would be expected. The dams used for immersion or baptism were excluded as a source of infection, since only recent converts entered the water, and none of these converts became infected.

As previously mentioned, the milk was consumed chiefly by the children, none of whom suffered from the disease. Further, it was definitely stated that the milk was invariably sealed. In view of these facts the milk supply was eliminated as a source of infection. It appeared, then, that the origin of the outbreak should be sought among the individual members of the group, some of whom may have been actually suffering from the disease at the time when they reached Wattamondara, or, perhaps, were "carriers."

Inquiry showed that no member was ill during the period of the Convention, but it was not possible to ascertain full details of recent illness, because of the lack of a complete list of those members of the sect who had attended the Convention.

Whilst these investigations were being carried out at Wattamondara, efforts were made to locate the headquarters of the sect. These were at first fruitless, but after some time the chief official was located in Sydney, and, with his co-operation, a list of the majority of those who had been at the Convention was obtained. Each of the members whose name had been supplied was communicated with and requested to complete and return the questionnaire shown in Appendix I. The replies enabled one to concentrate on those who had suffered from typhoid, or whose history suggested such possibility.



Men's cesspit closet.

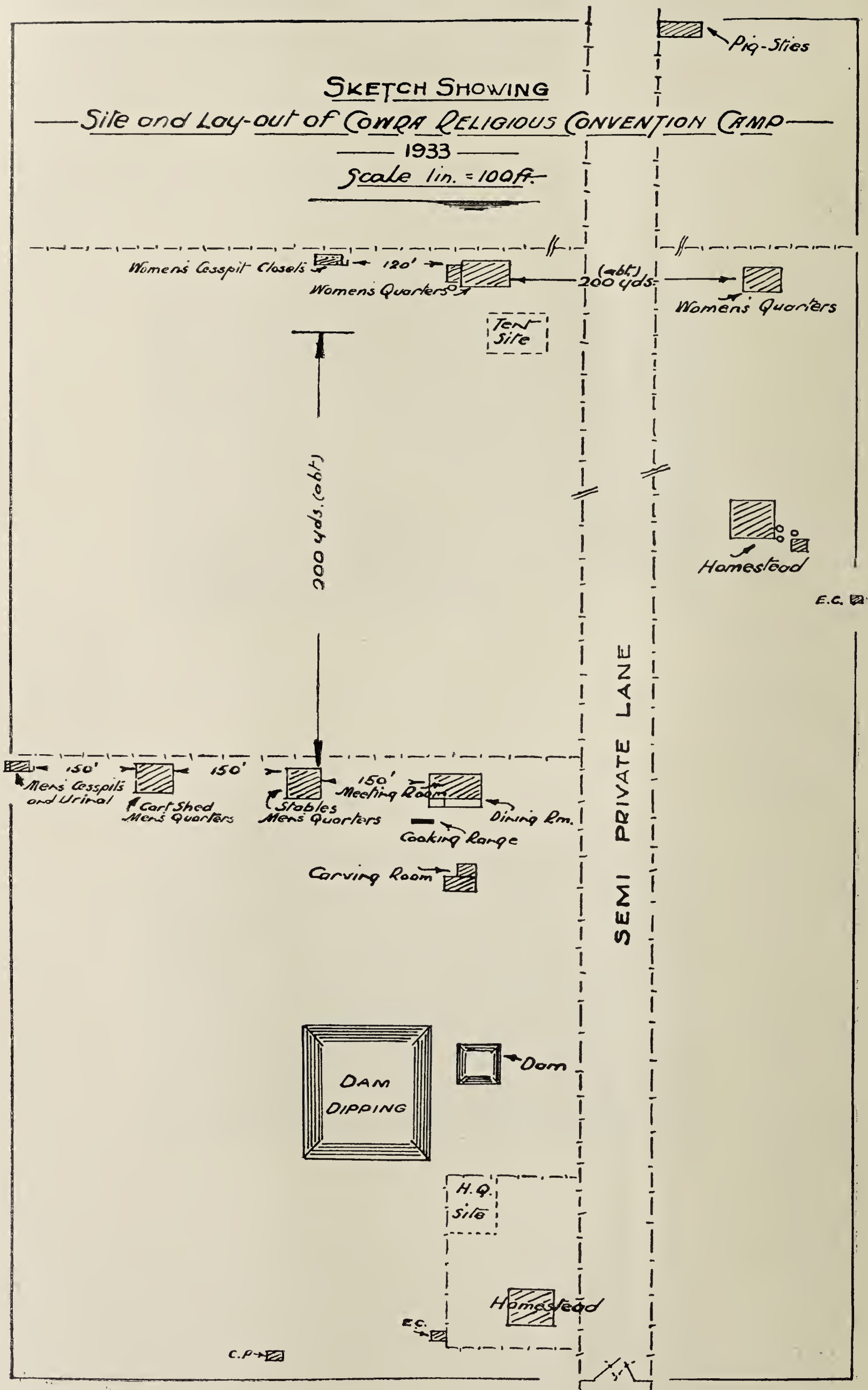
The collection of specimens of urine and faeces for bacteriological examination from such suspects involved a considerable amount of time and travelling, but specimens from nearly fifty individuals in various parts of the State were collected and examined with negative results.

Whilst these investigations were proceeding, a subsidiary list of persons who were present at the Convention was supplied. The list comprised those adherents who had only recently joined the sect, and had not attended any previous convention. The name of one of these adherents (J.H.B.) immediately



Women's closet (cesspit type).

aroused suspicion, because a person with a similar name had been diagnosed as a "carrier" in 1924. It was ascertained that J.H.B., in company with his wife, was travelling from town to town in the State in the capacity of an itinerant hawker vending jewellery ware. The aid of the police was sought in an endeavour to trace him, and, with commendable promptitude, he was located at Orange, where both he and his wife agreed to enter the local hospital for necessary investigation. An officer of the Microbiological Laboratory at once proceeded to Orange, and, within a few days, verified the fact that J.H.B. was excreting typhoid bacilli in his faeces. Examination of the urine and faeces of his wife proved negative. J.H.B. was brought to Sydney and admitted to the Coast (now Prince Henry) Hospital on 12th April, 1933, and remained there for more than three months. During this period he was treated by every known means short of surgical interference with the gall bladder, but was still excreting bacilli in his faeces when discharged from the hospital.



This has been our experience with other carriers, who, after intensive treatment with vaccines, intestinal antiseptics, bile pills, etc., still remain carriers in spite of all efforts. Apparently the dictum "once a carrier, always a carrier" is likely to remain true.

On discharge, J.H.B. was given a copy of "Precautions to be observed by Typhoid Fever Carrier," as shown hereunder (appendix II). The history of this carrier is as follows :—

1918 : Suffered from typhoid fever at Goulburn.

1919 : E.C.L. (his fiancée, now his wife) and her brother became infected at Goulburn with typhoid fever. A.B.L. (male), of same address, also infected.

1920 : Removed to "Yarrawallen," near Goulburn.

1921 : W.J.W. (male) died from typhoid fever at "Yarrawallen."

1922 : C.W. (wife of W.J.W.) and two children alleged to have suffered from typhoid fever, but were not notified.

1923 : H.A. (male) infected at "Yarrawallen."

1924 : J.H.B., as an outcome of the above cases, was found to be a faecal carrier, and given instructions re necessary precautions.

1924 : C.M. (male), who had been living with J.H.B. at Boxer's Creek, Goulburn, suffered from typhoid fever.

1925 : *B. typhosus* again isolated from faeces.

1933 : Left Boxer's Creek 2nd February, 1933, and attended Convention at Wattamondara, 9th to 13th February. Whilst at the Convention, he assisted in the preparation of food by peeling potatoes, etc.

There is little doubt that J.H.B. was responsible for the outbreak at Wattamondara, and, though intelligent and willing to co-operate, still remains a potential danger to others with whom he may come into contact. Until some means is available whereby the carrier condition can be eliminated, there appears to be no practical method for the control of this serious public health problem.

Any chronic carrier is liable sooner or later to act as the originating source of an epidemic, and the fact that some years may elapse (as in J.H.B.'s case) without his being associated with any case of the disease, may cause him to think that all danger is past.

The investigation of this outbreak emphasises the value of records concerning any ascertained carrier and the desirability of seeking their co-operation so that any change of address will be periodically obtained.

Appendix I.

OFFICE OF THE DIRECTOR-GENERAL OF PUBLIC HEALTH.

Sydney, 28 March, 1933.

INQUIRY INTO OUTBREAK OF TYPHOID FEVER FOLLOWING A RELIGIOUS CONVENTION HELD AT
WATTAMONDARA, NEAR COWRA.

This Department is endeavouring to discover the source of infection in the abovementioned outbreak of typhoid fever. It is understood that you attended the Religious Convention in February last, and it is requested that you will, at your earliest convenience, kindly fill in and return to the Acting Secretary, Office of the Director General of Public Health, 93 Macquarie-street, Sydney, replies to the following questions :—

1. Full name
Age.....Address
2. On what date did you arrive at Wattamondara ? When did you leave ?.....
.....
3. How many are in your family ? State names and ages.....
.....
4. Which members of your family attended the Convention ?.....
.....
5. Were you a helper at Convention ? If so, state what duties.....
.....
6. Were you sick or even slightly indisposed before or during the Convention ? If so, state when and in what way you were affected.....
.....
7. Have you been ill since Convention ? If so, state when and how affected.....
.....
8. Have you or any member of your family ever suffered from typhoid fever ? If so, state when.....
.....
9. Have you ever suffered from any other form of illness or fever ? Give date and full particulars.....
.....
10. Have you at any time been closely associated with anyone who has had typhoid fever ? Give full particulars
11. Do you enjoy good health ? If not, state full particulars.....
.....
12. State any other information you think might be useful in this investigation.....

If you know of anyone who attended the Convention who has not received a copy of this notice, please ask them all to send replies to these questions, each person using a separate sheet of paper.

JAMES J. POTTER,
Acting Secretary.

Appendix II.

NEW SOUTH WALES.

OFFICE OF THE DIRECTOR GENERAL OF PUBLIC HEALTH.

TYPHOID FEVER.

Precautions to be observed by Typhoid Fever "Carrier."

A typhoid fever "carrier" is a person having in his excretions or discharges germs of the disease, although presenting no signs or symptoms of that disease.

In the case of typhoid fever, the germs of infection are most frequently contained in the excretions and discharges of the bladder and bowels.

As you are deemed to be a "carrier" of typhoid fever, you are accordingly a source of danger to others with respect to anything which may become contaminated with your discharges. Hence you should carry out completely the following instructions to the best of your ability :—

1. The hands and nails should be thoroughly scrubbed with some disinfectant solution (if available), and with soap and water, and well rinsed before touching any foods, particularly those which are eaten in an uncooked condition. Great responsibility rests on you if you prepare or handle foods or utensils which are to be used by other persons.
2. You must not take any part in any business connected with the manufacture, preparation, handling or delivery of food for human consumption, or handle utensils used in connection therewith.
3. It is advisable that all milk or water used for drinking or in the preparation of food should be boiled before use by other persons resident in the same house as yourself.
4. After visiting a closet or urinal your hands and nails should be at once thoroughly scrubbed with soap and water. Give particular care to this if the bowels are loose.
5. If a pan closet is used, some strong disinfectant solution should be immediately added so as to completely cover the evacuations. The closet seat should have a well-fitting lid, which should be closed to prevent flies gaining access to the pan contents.
6. Always see that the seat of the closet is kept scrupulously clean after you have used it.
7. Always use a proper receptacle or closet for calls of nature. Never cast urine or faecal matters about the premises.
8. Keep a towel and basin for your own exclusive use.
9. Your personal body linen and used bed linen, etc., should always be boiled separately before being sent to the "general wash" or laundry.
10. It is safest to sleep alone and not share a room with anyone else.
11. See that no person uses the same bath water as yourself, and always cleanse a plunge bath after use by you.
12. Until otherwise directed, you should carry out the above instructions, or such others as may be ordered from time to time by a Medical Officer of Health or a Medical Practitioner authorised on that behalf by the Director-General of Public Health.
13. For your guidance as to means of disinfection and other precautions, the accompanying literature is forwarded.
14. It is strongly recommended that the other inmates of the household be protected against typhoid fever by protective inoculation. The material for effecting this will be supplied free of charge to any medical practitioner by the Department of Public Health.

ROBERT DICK,
Director-General of Public Health.

VENEREAL DISEASES ACT, 1918.

REPORT ON OPERATION OF THE ACT FOR THE YEAR ENDED 31st DECEMBER, 1933.

Commissioner ROBERT DICK, M.B., Ch.M., D.P.H.
Director of Division JOHN COOPER BOOTH, M.B., B.S.

Four thousand eight hundred and nine notifications of venereal disease were received during 1933, a decrease of 33 compared with 1932. Of these notifications, 30·19 per centum came from private medical practitioners, as compared with 40·92 per centum in 1932 and 48·58 per centum in 1931.

Syphilis.—Of the 4,809 total notifications received during 1933, 1,299 were for cases of syphilis (males 889 and females 410), a figure 111 below that for 1932. The sex ratio of notified cases of syphilis for 1933 was 2·17 males to one female. Of the cases of syphilis notified in 1933, 15·6 per centum were being treated privately as compared with 15·9 per centum in 1932 and 26·7 per centum in 1931. Of the total notifications of venereal disease in 1933, syphilis contributed 27·01 per centum as compared with 29·16 in 1932 and 24·26 in 1931. The notifications of syphilis gave a rate of 49·9 per 100,000 of population for 1933, compared with 55·66 per 100,000 for 1932, and 44·6 per 100,000 for 1931.

Gonorrhœa.—Of the 4,809 total notifications received during 1933, 3,197 were cases of gonorrhœa (males 2,695 and females 502), a figure 13 in excess of that for 1932. The sex ratio of notified cases of gonorrhœa was 5·36 males to one female. Of the cases of gonorrhœa notified in 1933, 30·28 per cent. were being treated privately as compared with 47·66 per cent. in 1932 and 52·17 per cent. in 1931. The percentage of cases of gonorrhœa notified in the total notifications of venereal disease was 66·48 per cent. for 1933, compared with 65·34 per cent. in 1932, and 68·96 per cent. in 1931. The notifications of gonorrhœa gave a rate of 122·9 per 100,000 of population for 1933, compared with 124·99 per 100,000 for 1932 and 126·8 per 100,000 in 1931.

Other Forms of Venereal Disease.—*Soft chancre* notifications were ·08 per cent. of the total notifications for 1933, as compared with ·10 per cent. in 1932 and ·30 per cent. in 1931.

Gonococcal ophthalmia increased to ·21 per cent. of the total notifications as compared with ·12 per cent. for 1932 and ·15 per cent. for 1931.

Venereal Warts were reported ·17 per cent. of the total notifications for 1933, as compared with ·25 per cent. in 1932 and ·22 per cent. in 1931.

Gleet.—Notifications of this condition accounted for 6·05 per cent. of the total notifications of venereal disease in 1933, compared with 4·98 per cent. in 1932, and 6·1 per cent. in 1931.

FAILURE TO CONTINUE TREATMENT.

When a patient discontinues treatment before being discharged as free from infection, the Act provides that his name and address shall be forwarded by his medical adviser to the Commissioner in order that steps may be taken to secure resumption of treatment. Any patient who fails to continue under treatment until cured is liable, on conviction, to a penalty not exceeding twenty pounds. During 1933 the names and addresses of 713 defaulters (564 males and 149 females) were notified—a figure 141 in excess of that for 1932.

Owing to wrong information having been given or patients having omitted to notify change of address 147 letters were returned unclaimed, giving 20·62 per cent. undelivered letters for 1933, compared with 40·03 per cent. for 1932 and 43·16 per cent. for 1931.

During the closing half of 1933 the heavy work thrown on the small office staff of the Division of Venereal Diseases, due to the establishment and operation of the rapidly growing continuous clinic for treatment of venereal disease in the male, made it impossible to follow up defaulters by visiting their homes when letters had failed to establish contact. The result of this enforced slowing down of “follow up” routine is reflected in the figures of unfinalised cases of default. Out of 713 notifications of default, 375 cases are yet unfinalised, and this figure has helped to swell the percentage remaining in default at the end of the year and has increased it by just on 20 per cent. over the figure of last year.

An efficient “follow up” system is essential if satisfactory results are to be obtained, and for this there must be adequate staff to permit of visits to the homes of defaulters who ignore written requests to resume treatment. Defaulters resident in the country many miles from towns, will always be difficult to deal with.

The following table shows the percentage of notified defaulters in the last six years who remained apparent permanent defaulters :—

Year.	Total Defaulters Notified.	Resumed Treatment, Dead, or left State.	Remained in Default.	Percentage Remaining in Default.
1928	1,113	441	672	60·38
1929	842	368	474	56·29
1930	774	400	374	48·32
1931	709	325	384	54·16
1932	572	268	304	53·15
1933	713	191	522	73·21

CLINICS.

Attendances at clinics for males numbered 110,533 for 1933, as compared with 69,542 for 1932 and 67,892 for 1931. At the clinics for females the attendances were 27,315 for 1933, as compared with 26,431 in 1932 and 26,886 in 1931. The sex ratio of attendances was 4.05 males to one female for 1933, compared with 2.6 males to one female in 1932 and 2.5 males to one female in 1931. The increase in male attendances is due to the opening of the new clinic at the Health Department.

Metropolitan District.—There are ten clinics in operation, and two of them (the clinic for men at the Health Department and the clinic at the Rachel Forster Hospital for Women) may be classed as continuous.

The new departmental clinic for males was opened on 12th June, 1933. It was somewhat in the nature of an experiment to see what support would be given to the establishment of a continuous clinic. The result has been satisfactory. Patients have attended regularly and we have only had 6.5 per cent. defaulters among 1,932 patients. The attendances at the new clinic since its opening six months ago have totalled 44,629. The number of patients registered totals 1,932, but about half of these were transfers from the out-patient clinic of the Coast Hospital. The average weekly registration of new patients at the clinic totals 48 and the attendances for treatment amount to 1,662 a week. The highest weekly attendance for the period under review was 1,806. 466 patients were discharged cured, 139 were transferred to hospital clinics, etc., 48 left the State and 124 were defaulters. The patients remaining under treatment on 31st December, 1933, numbered 1,155.

The hours of the clinic are 9 a.m. to 8.30 p.m. Monday to Friday; 9 a.m. to 12.30 p.m. on Saturday and 9 a.m. to noon on Sunday. It is open on public holidays. Two departmental medical officers are attached to the clinic and their hours of duty are so arranged that a medical officer is always on duty during the hours of the clinic (excepting Sundays and public holidays) and the two are on duty together during peak periods.

A patient desiring treatment at the clinic fills in and signs an application card. This card bears a number and the patient is known and called in future by that number. The signature is useful as a means of future identification in case the patient writes for advice after leaving the clinic, or if he forgets his number while attending the clinic—in each case the signature is compared. Some of the signatures are false as regards true identity at registration, but so long as there is no variation during contact with the clinic, the false signature is an identification. An unknown number of patients give false names and/or addresses and this is a difficulty in control that it is almost impossible to avoid.

Attendances of patients are checked in an attendance book and no patient is permitted to enter the irrigating room unless he has a ticket issued at each visit, bearing his number and the treatment ordered. This system prevents the presence of unauthorised persons in the irrigating room and also serves as an individual record of attendance.

Patients for anti-syphilitic treatment are checked in somewhat the same manner, the ticket bearing an urine report and the dose of the injection to be given, as well as the patient's number. The treatment of syphilis has been reorganised to meet the new clinic conditions and all arsenical injections are given at the clinic instead of at the Coast Hospital as in the past.

It is estimated that the clinic will register 2,500 patients a year and that it will deal with at least 85,000 attendances.

Newcastle District.—The notifications from Newcastle total 134 for 1933, 82 of the notifications being for syphilis, 49 for gonorrhœa and 3 for gleet. Obviously these figures do not represent the true incidence of venereal disease in Newcastle. It is hoped that the new clinic, at present under construction in Newcastle, will be opened about the middle of 1934.

Bed accommodation.—With the opening of the new clinic at the Health Department the bed accommodation for males at the Coast Hospital was reduced from 91 to 51. At other institutions there is a total of 59 beds for women and children.

Pathological examinations.—Table 2B shows the use made of laboratory tests for diagnostic purposes and progress reports. In 1933, 34,330 serological tests were made on 14,732 specimens; in 1932 the tests were 30,041 on 13,219 specimens, and in 1931, 28,223 tests on 12,700 specimens. In 1933, 8,617 smears were examined for detection of gonococci as compared with 6,505 in 1932 and 5,714 in 1931. Examinations for Spirochaetes numbered 136 in 1933, compared with 130 in 1932 and 107 in 1931.

VENEREAL DISEASE NOTIFICATIONS, 1929 TO 1933, INCLUSIVE.

Year.	Total Notifications.	Percentage Grouping in Notifications for Year.			Mean Population.	Rate per 10,000 of Mean Population.		
		Syphilis.	Gonorrhœa.	Other V.D.		Syphilis.	Gonorrhœa.	Other V.D.
1929	5,226	19.04	76.14	4.82	2,464,510	4.04	16.14	1.02
1930	5,225	27.02	68.08	4.90	2,489,657	5.67	14.29	1.03
1931	4,617	24.26	68.96	6.78	2,510,083	4.46	12.68	1.25
1932	4,842	29.16	65.34	5.50	2,531,330	5.57	12.5	1.06
1933	4,809	27.01	66.48	6.51	2,602,037	4.99	12.29	1.20

PROPAGANDA.

The usual short article on the “ Campaign against Venereal Disease ” was included in the free booklet issued during Health Week. During the year the various films in the possession of the Department were screened.

The Racial Hygiene Association organised meetings, displayed films and distributed literature.

PROSECUTIONS.

There were two prosecutions under the Venereal Diseases Act, 1918, namely :—

- 1. Action taken for breach of Section 25.—Fine of £15 inflicted, plus 8s. costs.
- 2. Action taken for breach of Section 25.—Fine of £5 inflicted, plus 8s. costs.

The following tables are appended :—

Table 1.—Notifications received during the year 1933, arranged in order of district from which the notifications are received.

Table 2.—Return of cases of Venereal Disease notified during 1933, showing forms of disease and age and sex of patients.

Table 3.—Diagnostic examinations for Venereal Disease made in the Microbiological Laboratory during the years 1931–33, inclusive.

Table 4.—Summary of annual attendances at public clinics 1931–33.

TABLE 1.—Notifications received during 1931 -1933, arranged in order of districts.

	Metropolitan Area.			Newcastle District.			Remainder of State.		
	1931.	1932.	1933.	1931.	1932.	1933.	1931.	1932.	1933.
Gonorrhœa	2,977	2,884	3,019	30	126	49	177	154	129
Syphilis	1,057	1,346	1,186	20	31	82	43	33	31
Soft chancre	13	5	4	...	...	...	1	...	...
Gleet	280	239	288	...	...	3	1	2	...
Venereal warts	10	12	8	...	...	...	...	...	...
Gonorrhœal ophthalmia	5	6	8	1	...	...	1	...	2
Venereal granuloma	1	3	...	...	...	...	...	1	...
Total	4,343	4,495	4,513	51	157	134	223	190	162

TABLE 2 (a).—Return of cases of Venereal Diseases notified during 1933, showing forms of disease, and age and sex of patients.

1931.	0 to 5		6 to 10		11 to 15		16 to 20		21 to 25		26 to 30		31 to 35		36 to 40		41 to 45		46 to 50		Over 50		Age not Stated.		Total.		Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Gonorrhœa ...	1	23	3	28	7	19	295	86	715	129	634	98	397	49	244	39	155	14	114	9	123	3	7	...	2,695	502	3,197
Syphilis ...	9	21	8	11	9	13	30	33	76	92	116	56	90	38	121	53	100	37	112	21	213	35	4	1	888	411	1,299
Gleet ...	...	...	...	...	...	...	5	1	31	...	75	...	46	1	52	...	43	...	27	...	10	...	...	...	289	2	291
Soft chancre ...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	2	...	...	...	...	...	...	...	...	...	4	...	4
Venereal warts...	...	...	...	...	...	...	...	...	...	...	...	1	3	...	2	...	1	...	1	...	...	...	...	...	7	1	8
Gonorrhœal ophthalmia ...	2	6	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	3	7	10
Venereal granuloma ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	12	55	11	39	16	32	330	120	822	222	827	155	536	88	421	92	300	51	254	30	346	38	11	1	3,886	923	4,809

TABLE 2 (b).—Diagnostic examinations for Venereal Diseases made in the Microbiological Laboratory during the years 1931–1933, inclusive.

Year.	Gonorrhœa. (Smears and Urine.)	Gonorrhœa. (Complement Deviation Test.)	Syphilis. (Wassermann Reaction.)	Syphilis. (Kahn's Test.)	Syphilis, (Smears for Spirochætes.)
1931	5,714	3,627	12,700	11,866	107
1932	6,505	4,433	13,219	12,389	130
1933	8,617	5,464	14,732	14,134	136

TABLE 3.—Showing Annual Attendance Returns at Public Clinics for treatment of Venereal Diseases, 1931–1933.

Year.	Attendances.			New Cases.					
				Gonorrhœa.			Syphilis.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
<i>Royal Prince Alfred Hospital.</i>									
1931	29,588	7,104	36,692	248	120	368	88	76	164
1932	29,187	6,547	35,734	323	122	445	77	56	133
1933	31,356	6,580	37,936	359	78	437	84	44	128
<i>Sydney Hospital.</i>									
1931	11,428	4,567	15,995	233	83	316	185	71	256
1932	13,258	4,889	18,147	125	36	161	157	58	215
1933	13,218	5,046	18,264	204	30	234	139	56	195
<i>Royal Alexandra Hospital for Children.</i>									
1931	835	2,706	3,541	1	31	32	16	25	41
1932	917	2,595	3,512	...	17	17	11	25	36
1933	612	2,560	3,172	...	25	25	7	13	20
<i>Royal South Sydney Hospital.</i>									
1931	3,706	1,082	4,738	116	6	112	23	6	29
1932	3,262	993	4,255	139	14	153	15	14	29
1933	2,880	1,145	4,025	79	3	82	18	11	29
<i>Royal North Shore Hospital.</i>									
1931	3,946	1,513	5,459	85	13	98	13	9	22
1932	5,441	1,819	7,260	128	38	166	14	9	23
1933	5,451	1,845	7,296	109	9	118	28	29	57
<i>Coast Hospital, Night Clinic for Syphilis (Men only).</i>									
1. Hospital Admission Depot, Head Office (Coast Hospital Staff).									
1931	10,653	...	10,653	...	...	...	386	...	386
1932	8,822	...	8,822	...	...	...	328	...	328
1933	3,125	...	3,125	...	...	...	150	...	150
2. Coast Hospital, Little Bay (Gonorrhœa only).									
1931	6,932	...	6,932	1,006	...	1,000	...	...	...
1932	3,751	...	3,751	817	...	817	...	...	...
1933	1,585	...	1,585	324	...	324	...	...	...
<i>Rachel Forster Hospital for Women and Children.</i>									
1931 .....	...	8,760	8,760	...	192	192	...	99	99
1932 .....	...	8,395	8,395	...	169	169	...	126	126
1933 .....	...	8,458	8,458	...	152	152	...	149	149
<i>Balmain District Hospital.</i>									
1931	610	1,040	1,650	...	...	...	10	18	28
1932	844	1,151	1,995	...	...	...	15	13	28
1933	863	1,034	1,897	...	...	...	4	10	14
<i>Parramatta District Hospital.</i>									
1931	194	114	308	7	4	11	11	1	12
1932	711	187	898	...	...	...	...	...	...
1933	661	195	856	35	10	45	9	2	11
<i>St. George District Hospital, Kogarah.</i>									
Records not available before 1932.									
1932	60	42	102	12	4	16	4	1	5
1933	820	452	1,272	15	5	20	25	15	40

SECTION I.—D.

TUBERCULOSIS DIVISION.

ANNUAL REPORT OF THE DIRECTOR FOR THE YEAR ENDED 31st DECEMBER, 1933.

STAFF.

Director—Dr. H. K. Denham, B.A., LL.B., M.B., Ch.M., D.S.O., V.D.

Medical Officer—Dr. John Hughes, M.B., Ch.M. (Appointed 4th December, 1933).

1 Clerk, 4 Visiting Nurses.

Throughout the past year the attention of the Division has been directed towards impressing upon the minds of those coming in contact with this disease, the work of the anti-tuberculosis dispensaries or clinics, which serve a threefold purpose :—

- (1) A diagnostic centre.
- (2) An educative centre.
- (3) A clearing house to the Sanatorium.

It aims at securing for the individual, early diagnosis, prompt treatment and admission to a suitable sanatorium; instruction for both patients and contacts in personal and industrial hygiene, and guidance to the patient, who having spent his period in a sanatorium, returns to take his place in civil life.

Notification.—Although the notification of Pulmonary Tuberculosis was made to apply to the whole State on March 1st, 1929, there still remain some medical practitioners who do not comply with the requirements of the Act.

Efforts have been made through the various medical journals on several occasions, to impress the medical practitioner with the importance of notification.

The total number of notifications for the whole State during 1933 was 1,441, a decrease on the previous year of 44 cases. In the Metropolitan District there was an increase of 17 cases, and in the Broken Hill District an increase of 12 cases, whilst in the Hunter River District there was a decrease of 16 cases, and for the remainder of the State a decrease of 57 cases.

Details of the distribution, and age and sex incidence of the notified cases are given in Table 1; and in Table 2 the monthly incidence of notified cases, and also the number of cases "To be visited" and "Not to be visited."

TABLE 1.—Showing the age and sex incidence of the cases of Pulmonary Tuberculosis notified during the year 1933.

Age Period.	Metropolitan Combined Sanitary District. Mean Population 1,304,580.			Hunter River Combined Sanitary District. Mean Population, 210,970.			Broken Hill Combined Sanitary District. Mean Population, 26,930.			Remainder of State. Population, 1,059,557.			Whole State. Population, 2,602,037.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
Under 1 year	1	...	1	...	...	...	...	...	...	...	...	...	1	...	1
1-4	2	1	3	...	...	...	...	...	...	...	1	1	2	2	4
5-14	6	12	18	...	...	...	...	...	...	...	6	6	6	18	24
15-24	77	113	190	2	9	11	2	...	2	24	34	58	105	156	261
25-34	152	153	305	4	8	12	3	3	6	24	28	52	183	192	375
35-44	147	84	231	17	6	23	1	2	3	32	20	52	197	112	309
45-54	150	44	194	8	1	9	7	...	7	23	12	35	188	57	245
55-64	89	23	112	11	1	12	2	1	3	21	7	28	123	32	155
65 and over	34	12	46	1	...	1	2	...	2	11	7	18	48	19	67
All ages	658	442	1,100	43	25	68	17	6	23	135	115	250	853	588	1,441

Federal Capital Territory—1 female, aged 28 years, not included in above tables.

TABLE 2.—Showing monthly incidence of notified cases of Pulmonary Tuberculosis and also incidence of cases "To be Visited" and cases "Not to be Visited," year 1933.

Month.	Metropolitan Combined Sanitary District.		Hunter River Combined Sanitary District.		Broken Hill Combined Sanitary District.		Remainder of State.		Whole State.	
	To be Visited.	Not to be Visited.	To be Visited.	Not to be Visited.	To be Visited.	Not to be Visited.	To be Visited.	Not to be Visited.	To be Visited.	Not to be Visited.
January ...	47	40	1	...	1	...	4	12	53	52
February...	58	28	...	...	...	...	6	7	64	35
March ...	84	40	...	2	...	1	19	13	103	56
April	78	17	1	2	6	...	6	9	91	28
May	88	15	11	...	...	...	13	12	112	27
June	91	14	5	2	3	...	10	9	109	25
July	45	19	6	2	2	...	13	4	66	25
August ...	48	10	3	2	4	...	7	5	62	17
September	81	21	8	2	1	...	12	18	102	41
October ...	69	18	4	3	1	...	14	7	88	28
November	74	12	4	...	2	...	12	10	92	22
December	92	11	9	1	1	1	15	13	117	26
Totals	855	245	52	16	21	2	131	119	1,059	382

Federal Capital Territory, December, 1 case "not to be visited," not included in above table.
During the year there were 1,348 second notifications received.

Deaths.

TABLE 3.—Showing the number of deaths from all forms of Tuberculosis in (a) Metropolitan, (b) whole State, during the year ended 31st December, 1933.

	Metropolis.			Whole State.		
	Males.	Females.	Total.	Males.	Females.	Total.
Respiratory system	373	205	578	603	345	951
Meninges and nervous system	7	13	20	21	17	38
Other	21	18	39	42	32	74
Total	401	236	637	669	394	1,063

TABLE 4.—Showing the age and sex of the persons whose deaths from Pulmonary Tuberculosis were notified during the year ended 31st December, 1933.

Age Period.	Metropolitan Combined Sanitary District. Mean Population: 1,304,580			Hunter River Combined Sanitary District. Mean Population: 210,970			Broken Hill Combined Sanitary District. Mean Population: 26,930			Remainder of State. Mean Population: 1,059,557			Whole State. Mean Population: 2,602,037		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
Under 1 year	1	...	1	...	...	...	...	...	...	...	...	...	1	...	1
1-4 „ .....	...	2	2	...	...	...	...	...	...	...	...	...	...	2	2
5-14 „	1	2	3	...	...	...	...	...	...	...	3	3	1	5	6
15-24 „	29	52	81	1	3	4	1	...	1	14	26	49	45	81	126
25-34 „	68	63	131	4	3	7	1	...	1	22	32	54	95	98	193
35-44 „	78	43	121	9	5	14	...	...	...	33	17	50	120	65	185
45-54 „	109	26	135	6	4	10	7	1	8	45	14	59	167	45	212
55-64 „	72	17	89	8	1	9	3	...	3	27	8	35	110	26	136
65 and over.....	39	14	53	2	1	3	4	...	4	22	8	30	67	23	90
All ages	397	219	616	30	17	47	16	1	17	163	108	271	606	345	951

The downward trend of tuberculosis in this State during the past 58 years is shown in appended Graphs 1 and 2.

TABLE 5.—Showing Institutional Accommodation available for patients suffering from Pulmonary Tuberculosis.

Sanatoria and Hospitals.	Type of Cases Received.	Number of Beds.		
		Male.	Female.	Total.
1. Waterfall Sanatorium (under Government control)	Intermediate	292	136	428
2. Randwick Auxiliary Hospital (under Government control)	Late	60	30	90
3. Queen Victoria Homes (subsidised)—				
Thirlmere	Early female .....	...	54	54
Wentworth Falls	Early male	54	...	54
4. Red Cross Society (subsidised)—				
“Bodington” at Wentworth Falls	Early male and female	89	9	98
“Malahide” at Pennant Hills	Late male and female... ..	15	6	21
“Southern” at Exeter	Male quiescent	20	...	20
(The above institutions work in full co-operation with the Tuberculosis Division.)				
R. T. Hall Sanatorium .....	.....	4	4	8
Private Hospitals (approximately) .....	.....	...	...	40
Repatriation Department—				
Prince of Wales Hospital .....	.....	65	...	65
Lady Davidson Home .....	.....	77	...	77
				955

TABLE 6.—Showing number of patients receiving Institutional treatment during 1933.

	Queen Victoria Sanatorium, Wentworth Falls.	Queen Victoria Sanatorium, Thirlmere.	Red Cross Sanatorium, Wentworth Falls.	Waterfall Sanatorium.	Red Cross Hospital, Pennant Hills.	Coast Auxiliary Hospital, Randwick.	Red Cross Convalescent Home, Exeter.
1. Number of patients in Institution on 1st Jan., 1933	43	48	64	403	20	90	11
2. Number of patients admitted during 1933	65	75	97	481	37	287	34
3. Number of patients discharged (including deaths) during 1933	63	70	67	532	37	200	30
4. Number of patients remaining in Institution on 31st December, 1933	50	49	94	352	20	87	16
5. Average daily number of beds occupied	47.25	48.06	53	368	20.07	87.0	17.4

TABLE 7.—Showing the average residence in days and condition on discharge from Sanatoria and Hospitals of patients under treatment during 1933.

Condition on Discharge.	Queen Victoria Sanatorium, Wentworth Falls.		Queen Victoria Sanatorium, Thirlmere.		Red Cross Sanatorium, Wentworth Falls.		Waterfall Sanatorium.		Red Cross Hospital, Pennant Hills.		Red Cross Convalescent Home, Exeter.	
	No. of Patients.	Average Residence in Days.	No. of Patients.	Average Residence in Days.	No. of Patients.	Average Residence in Days.	No. of Patients.	Average Residence in Days.	No. of Patients.	Average Residence in Days.	No. of Patients.	Average Residence in Days.
1. Arrested (A.) .....	...	...	...	...	...	...	...	...	...	...	...	...
2. Quiescent (Q.)	32	241	28	255	20	255	41	414	...	...	...	...
3. Much Improved (M.I.) ...	28	247	28	252	28	264	71	215	5	121	2	243
4. Improved (I.)	9	151	10	152	29	129	157	183	3	84	22	132
5. Stationary (S.) .....	...	169	4	139	9	144	56	39	6	35	3	109
6. Worse (W.)	1	168	9	151	4	277	105	290	5	129	3	100
7. Dead (D.)	1	89	...	...	4	408	99	385	18	79	...	...
Total	71	...	79	...	94	...	529	...	37	...	30	...

TABLE 8.—Showing condition of patients on admission to, and discharge from, Institutions for the treatment of Pulmonary Tuberculosis during 1933.

Condition on Admission.	Queen Victoria Sanatorium, Wentworth Falls.								Queen Victoria Sanatorium. Thirlmere.								Red Cross Sanatorium. Wentworth Falls.								Waterfall Sanatorium.								Red Cross Hospital, Pennant Hills.										
	Condition on Discharge.								Condition on Discharge.								Condition on Discharge.								Condition on Discharge.								Condition on Discharge.										
	A.	Q.	M.I.	I.	S.	W.	D.	Total.	A.	Q.	M.I.	I.	S.	W.	D.	Total.	A.	Q.	M.I.	I.	S.	W.	D.	Total.	A.	Q.	M.I.	I.	S.	W.	D.	Total.	A.	Q.	M.I.	I.	S.	W.	D.	Total.			
L1T1	1	1	2	...	22	6	3	1	3	...	35	...	7	7	5	2	...	1	22	...	10	3	2	5	2	...	22
L2T1	24	14	7	1	46	...	4	8	3	2	2	...	19	...	13	11	9	...	1	1	35	...	13	19	34	12	11	1	90	1	1
L1T2	1	4	...	1	6
L2T2	7	11	2	20	6	2	10	5	8	4	1	...	18	...	3	3	8	3	5	2	24	2	2
L3T1	1	1	...	1	1	1	...	1	...	4	3	2	2	1	2	10	...	7	29	52	17	29	23	157	1	2	3
L3T2	1	1	3	1	...	1	...	5	2	5	1	1	...	9	...	7	17	53	15	46	47	185	1	1	3	1	6
L1T3
L2T3
L3T3	1	...	1
	...	32	28	9	...	1	1	71	...	28	28	10	4	79	...	20	28	29	9	4	4	94	...	41	71	157	56	105	99	529	5	3	6	5	18	37

Picton Lakes Village T.B. Settlement.—During 1933 there were no new additions to the Settlement, which has 32 buildings for patients and their dependents. The cottages for married patients number 19, and for single patients there are two hostels, the balance of the buildings comprise administration section, workshops, etc. The population at the 31st December, 1932, totalled 59 persons, of which 17 were arrested cases of tuberculosis, the balance being members of their families. A resident matron who is a registered nurse is in charge of the Settlement.

Every patient is called upon to do a certain amount of work, for as many hours of the day as is compatible with his state of health, in the industrial section of the Settlement. The main products of this section are small articles of household furniture, any profits from the sale of which go to the patients who manufacture them. The patients grow their own vegetables and sell the flowers grown in the gardens surrounding the cottages.

The children of school age in the Settlement attend the public school in the neighbourhood.

TABLE 9.—Comparative Statement of work carried out at the various Anti-Tuberculosis Dispensaries during a period of 12 months in 1933.

	Royal Prince Alfred Hospital.	Royal North Shore Hospital.	Anti-Tuberculosis Association of N.S.W.	Newcastle Throat and Chest Dispensary.
1. Total number of persons who attended for examination	2,302	471	1,933	395
(a) First attendance during year	1,185	239	1,204	293
(b) Attended in previous years and re-attended during year	1,117	232	729	102
2. Total number of attendances	7,307	1,815	8,950	1,543
3. Number of persons found tuberculous	312	66	198	27
4. Number of persons found not tuberculous	577	165	938	256
5. Number of persons where diagnosis is not yet completed	296	18	68	...
6. Number of contacts examined	724	140	653	31
7. Number of contacts found to be infected	193	1	25	...
8. Number of sputum examinations	576	113	1,287	73
9. Number of X-ray examinations	1,693	327	450	118
10. Number of nurses' visits	2,464	2,748	3,055	98
11. Number of homes visited	1,518	516	750	50
12. Sent to Sanatoria	198	19	142	11
13. Sent to hospital	76	32	54	25
14. Sent to country	89	10	19	4
15. Number of deaths recorded	123	14	62	10

Visiting by Nurses.—In the metropolitan district this service is undertaken by four departmental nurses assisted by four nurses provided by the dispensaries; in the Hunter River District a departmental nurse carries out this work,

TUBERCULOSIS.

Annual Death Rate per 100,000 of the Population in New South Wales, 1875-1933.

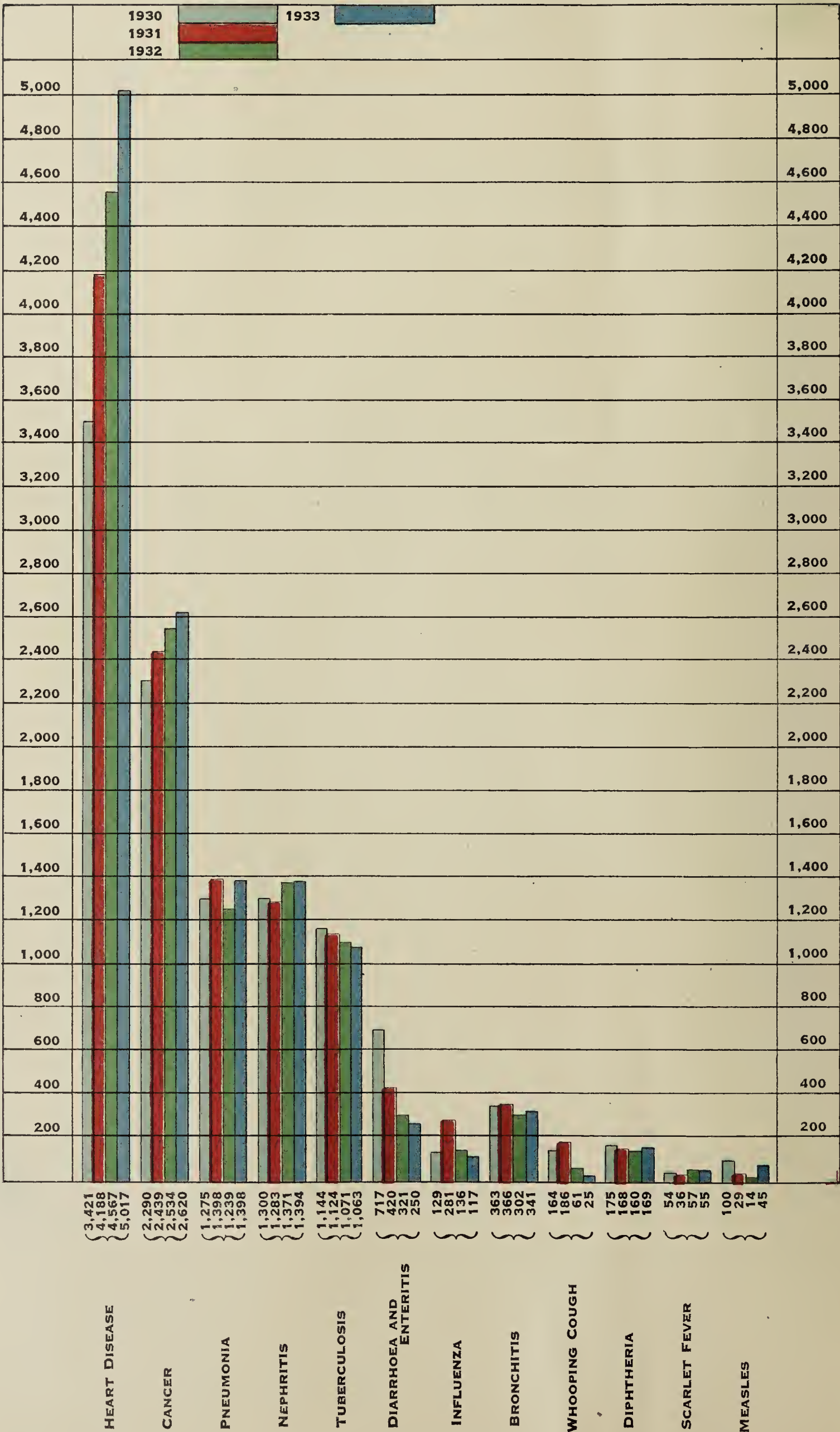


TUBERCULOSIS.

Graph 2.

NEW SOUTH WALES.

Total Deaths from Some of the Principal Diseases, 1930-1933.



NOTE—IN 1895, TUBERCULOSIS OCCUPIED FIRST PLACE AS A CAUSE OF DEATH; IN 1928, IT HAD FALLEN TO FOURTH PLACE; SINCE 1928, IT HAS OCCUPIED FIFTH PLACE

TABLE 10.—Comparative Statement of work performed by visiting nurses in the metropolitan area for the years 1929–1933, inclusive.

Year.	Total Visits by Nurses.			Total Visits by Departmental Nurses.		No. of Homes visited by all Nurses.		No. of Visits paid by all Nurses.		Average Number of Visits per Patient per Year.		
	Departmental Nurses.	Non-Departmental Nurses.	Total.	Dispensary Cases.	Non-Dispensary Cases.	Dispensary Cases.	Non-Dispensary Cases.	Dispensary Cases.	Non-Dispensary Cases.	Dispensary Cases.	Non-Dispensary Cases.	All Cases.
1929 ...	4,023	5,610	9,633	2,455	1,568	1,729	533	7,872	1,761	4.5	3.3	4.2
1930 ...	7,052	4,826	11,878	3,618	3,434	1,780	1,080	8,444	3,434	4.7	3.1	4.1
1931 ...	8,170	5,205	13,375	4,305	3,865	2,046	1,022	9,510	3,865	4.6	3.7	4.4
1932 ...	5,178	5,596	10,774	2,990	2,188	2,497	835	8,647	2,127	3.5	2.4	3.2
1933 ...	7,125	5,212	12,337	4,185	3,519	3,155	1,248	8,818	3,519	2.7	2.8	2.8

It is considered necessary that more attention should be given to this important work, but this will only be made possible by the appointment of additional nurses.

Publicity.—During the year publicity work in connection with tuberculosis has been continued. This has taken the form of display of models and posters during Health Week; the distribution of leaflets on the disease, its treatment, and the precautions to be taken to avoid infection; and the publication of articles dealing with the disease, etc., in the country and suburban newspapers.

Urgent Requirements.—The following are the more important requirements in furtherance of the campaign against tuberculosis :—

- (1) Visiting nurses; two additional nurses are required to cope more effectively with the work in the metropolitan area.
- (2) A clinic in the western suburbs which could serve both the Liverpool and Parramatta districts, a clinic at Hornsby for outlying northern districts, and a clinic at Broken Hill.
- (3) The establishment of preventoria. These are homes for undernourished children, and as the name indicates their purpose is to prevent the effects of poor health and unhygienic conditions in childhood from manifesting themselves in later years.
- (4) Suitable accommodation for patients who are not in an early enough stage of the disease to warrant their admission to the Queen Victoria Homes, and who could pay a moderate sum (one to two guineas per week) for their maintenance.

Co-operation.—Thanks are due to members of the Board of Control and to the various hospitals, associations, and other agencies for active co-operation throughout the year in the work of the Division.

H. K. DENHAM,
Director.

APPENDIX "A."

SCHEME FOR THE CLASSIFICATION OF TUBERCULOUS PATIENTS.
(Formulated by Board of Control of the Campaign against Tuberculosis.)

On First Examination.

The extent of the lung lesion as determined by clinical findings to be denoted by the symbols L1, L2 and L3.

The Toxicity or degree of systemic effect to be denoted by the symbols T1, T2 and T3.

The extent of the lesion as determined radiographically to be denoted by the symbols R1, R2 and R3.

Definitions.—L1—Lesion of slight severity affecting at most the apices of both lungs not lower than the spine of the scapula and the clavicle on each side or the apex of one lung not lower than the second rib in the front and the spine of the scapula behind, or an equivalent area in any one lobe.

L2.—Lesion of slight severity more extensive than L1, but affecting at most the volume of one lobe, or severe disease extending at most to the volume of one half lobe.

L3.—Lesion of slight severity more extensive than the volume of one lobe; severe lesion more extensive than the volume of one half lobe.

NOTE.—By lesion of slight severity is to be understood disseminated foci of infiltration or slight fibrosis; by severe lesion, consolidation, excavation or dense fibrosis—in each case as indicated by the obvious physical signs. A small area of dry pleurisy should not exclude a case from L1.

For the purpose of classification, the right upper and middle lobes are to rank as one lobe.

T1.—Constitutional disturbance absent or slight, as judged mainly by the temperature, pulse-rate and effect on nutrition and strength.

For example, temperature after an hour's rest should rarely exceed 99 degrees in the mouth at maximum or, if higher, should be reducible to the lower figure by a week's rest in bed. Pulse rate after an hour's rest should rarely exceed 90.

T3.—Severe constitutional disturbance or deterioration; one or more symptoms present in severe degree. For example, temperature during rest at the maximum persistently over 100·8 in the mouth, or 101·3 in the rectum; pulse-rate during rest persistently over 96. All cases with severe complications, whether tuberculous or not, fall in this grade.

T2.—All cases intermediate between T1 and T3.

NOTE.—Rectal temperatures are preferable; when mouth temperatures are used, the thermometer should be kept in the closed mouth for at least 5 minutes. In the case of women, add to the temperature limits given 0·6 degrees for the premenstrual rise which may normally occur.

R1, R2 and R3 to be expressed on the basis of the same definitions as for the clinical findings, i.e., L1, L2 and L3.

The presence of tubercle bacilli in the sputum at any time to be denoted by the symbol B+. If tubercle bacilli have never been demonstrated in the sputum at any time the symbol B— to be used.

On Subsequent Observation.

A. Arrested.—A case should not be classed as arrested until it has been quiescent two years. Sputum to be free on at least three consecutive occasions at intervals of one week prior to discharge.

Q. Quiescent.—I.e., no symptoms of tuberculosis and no signs of tuberculosis except such as are compatible with a completely healed lesion and in which the sputum, if present, is free from tubercle bacilli.

M.I. Much Improved.—I.e., the condition is not quiescent but (i) the general health is good, (ii) the signs and symptoms of tuberculosis are materially diminished, (iii) working capacity is more or less restored.

S.—Stationary. W.—Worse. D.—Dead.

Subsequently the Board decided on the following standards to be adopted by the Examining Medical Officers for the various institutions with regard to the suitability of applicants for admission:—

L1T1, L2T1.—Early case, suitable for Queen Victoria Homes or Bodington.

L1T2.—To be kept under observation in bed for 14 days—if marked improvement, suitable Queen Victoria Homes or Bodington; if no improvement, suitable for Waterfall; if retrogression, suitable for Hospital.

L2T2, L3T1, L3T2.—Intermediate case, suitable for Waterfall.

L1T3, L2T3, L3T3.—Advanced case, suitable for Hospital.

Graphs.

1. Annual death-rate from Tuberculosis per 100,000 of population in New South Wales 1875-1933.
2. Total deaths from some of the principal diseases in New South Wales 1930-1933.

[2 graphs.]

SECTION I.—E.

DIVISION OF INDUSTRIAL HYGIENE.

REPORT OF THE MEDICAL OFFICER OF INDUSTRIAL HYGIENE FOR THE YEAR
ENDED 31ST DECEMBER, 1933.

Staff.—Medical Officer of Industrial Hygiene, CHARLES BADHAM, B.Sc., M.B., Ch.M., D.P.H.;
Physicist Assistant, H. E. G. RAYNER, B.Sc.; Second Assistant, A. M. WILLISON, B.Sc.

This division undertakes the investigation of hazards to health in factories, mines and industry generally; the ventilation of theatres, cinemas and other places, the examination of factory children; and the diagnosis of cases of occupational disease.

DUST DISEASES OF THE LUNGS.

The work on lungs affected by dust has continued, and it is hoped shortly to finalise a report dealing with some sixty lungs showing pneumonocotic changes. This work is being done in collaboration with Dr. H. B. Taylor, of the Government Analyst's Branch, and Mr. Whitworth, of the Mines Department. It is proposed to give a full pathological, chemical and petrological report on these lungs along the lines of our previous paper.* This work has already greatly increased our knowledge, particularly of coal miners' lungs. Recent work by Dr. W. R. Jones has shown the importance of sericite. We had already shown that an intractable silicate could cause nodular fibrosis, and written of it as a sillimanite, but it is definitely an allied micaceous body—sericite. I had also in my article in 1928 anticipated that sericites would be a cause of pneumoconiosis in Western Australian miners, but could not secure lungs to determine this fact.

I have not been able to agree with the opinion that *quartz sine sericite* could not produce silicosis, for the examination of the lungs of sandstone miners shows a relatively small number of sericite particles. Nevertheless, for years I have been satisfied that the silicates had not been exculpated as a cause of pulmonary fibrosis, and the recent work shows that at least one of them, sericite, may cause fibrosis.

A number of coal miners with pulmonary fibrosis have been examined for the Workers' Compensation Commission, and some of these cases have come to post mortem.

A mill hand in an asbestos works was found radiographically to have definite asbestosis. This is the first case recorded in Australia. He had bronchitis, and the typical bodies were found in his sputum.

EXPERIMENTAL DUSTING CHAMBERS.

A systematic investigation of the action of certain dusts on the lungs of 250 experimental animals, guinea pigs and rabbits, has now been in progress for three years. The first hundred animals exposed to Sydney sandstone dust for from 500 to 700 days have died from the consolidation of the lungs by dust cells. Other animals exposed to the same dust for a shorter period are under observation.

A number of animals have been exposed to shale, coal, limestone, and a mixture of these. These dusts are found in our New South Wales coal mines, and the experiments were primarily planned to determine the action on the lungs of the dusts to which coal miners might be exposed, but the investigation of other dusts which may be inimical to health has also been undertaken, and in view of the recent work of Dr. W. R. Jones in England, a dust chamber has been set aside to investigate the action of a quartz dust which is sericite free.

LEAD POISONING.

As in previous years the largest number of cases of lead poisoning were reported from accumulator factories, and this year twenty-four men, who were lead-poisoned, were seen, seventeen from one factory employing about thirty workers in lead processes. Sixteen of these twenty-four were engaged in mixing, pasting, and the manufacture of lead oxide. Only one case was reported from the two largest factories, where the working conditions are now reaching a standard which is aimed at in the smaller places. Fortnightly medical inspection has been instituted in five factories, and several others may adopt similar protective measures. The examination of blood smears sent by the medical officer in charge of five factories has been continued. During the twelve months my Division examined 816 such slides, and the results have been most helpful as a guide to the standard of hygiene in the works and to the factory medical officer. By this means he has been able to transfer to a non-lead process employees showing evidence of lead poisoning without disability and later to allow them to return to their previous work.

In trades other than the manufacture of accumulators only eight cases of lead poisoning were seen, as follows:—Smelting of metals, 3; house painting, 2; bridge painting, 1; painting of metal water pipes, 1; and hand composing, 1.

A case of wrist drop was seen in a smelter who had been employed for one and a half years melting down scrap metal, chiefly old battery plates. He had suffered from recurring attacks of abdominal pain for about eight months, and had had an operation for appendicitis in this period. Wrist drop was marked in the right wrist and less marked in the left, and the extensors of the fingers of both hands were paralysed.

* Badham, C., and Taylor, H. B.—Coal Miners' Lung; preliminary account of the Chemical Analysis and Pathology of the Lungs of Coal Miners in New South Wales. *Med. Jour. of Aust.*, 29th April, 1933, p. 511.

The following table shows the occupations of sixty men investigated for lead poisoning by my division for the year 1933, and the diagnosis :—

Table showing the occupations of sixty individuals investigated for lead poisoning by the New South Wales Division of Industrial Hygiene in the year 1933, and the diagnosis :—

Industry.	Occupation.	Number examined.	Lead poisoning with disability.	Not lead poisoning or lead poisoning without disability.
Printing	Hand composing	4	1	3
	Stereotyping	2	...	2
Manufacture of electric accumulators.	Pasting	10	8	2
	Mixing	5	5	...
	Assembling	3	3	...
	Moulding	4	2	2
	Handling dry plates	4	3	1
	Repair work	2	1	1
	Lead oxide plant	4	3	1
	Carpenter	1	1	...
	.....	1	...	1
Plumbing and soldering	Petrol pump maintenance	1	...	1
Petrol distribution	Coach painter	1	...	1
Painting	House painters	6	2	4
	Spray painters	2	...	2
	Bridge painters	1	1	...
	Painting of water pipes	1	1	...
	Ship painter	1	...	1
	.....	3	3	...
Smelting of metals	Adventitious exposure	2	...	2
Miscellaneous	Non-lead worker	2	...	2
		60	34	26

At the request of the Industrial Commission an inquiry was made into the hazards of certain employees engaged in vitreous enamelling. In three factories lead glaze is used, and ten of the blood smears taken from fifteen employees in two of these factories showed punctate basophilia varying from 250 to 6,500 stippled cells per million red cells.

TETRA-ETHYL LEAD.

At each medical inspection by Dr. Fairley of the Sydney men engaged in mixing ethyl lead petrol we have examined the blood slides taken for the presence of punctate basophilia. The average count is about 350 per million red cells, which shows a definite lead intake, but it appears that the present methods of mixing are quite satisfactory.

In a paper entitled “Basophilia and Lead Excretion in Lead Poisoning”* written by me, the development of the methods practised by this Division for the diagnosis and prevention of lead poisoning are described. A table shows the occupations of 515 individuals investigated for lead poisoning by this Division in the seven years 1927–1933, and the diagnosis.

ARSENIC POISONING.

Three cases of arsenic poisoning occurred in men engaged spraying prickly pear with arsenic pentoxide in aqueous solution, but sometimes they used arsenic in solution with strong sulphuric acid. It appears that there is less danger of being poisoned with arsenic at this work when using the acid solution, for then the spray is irritating and the sprayer is careful to avoid it by working on the windward side.

One of the affected men complained of diarrhoea, alternating with constipation. At times he had seven to eight motions each day, with abdominal pains, and vomiting about every third day, ulcer of nasal septum, conjunctivitis, soreness of nails, coughing of phlegm and blood, and giddiness. He had a rash in the groin and on the forehead, and also ulcers of knees and shins. His finger nails showed black to brown areas of haemorrhagic character, and were in an early stage of sloughing.

Each of the affected men was on compensation for several months, and two who returned to the same work had a second attack within a year.

Approximately seventy men are engaged on this work, but only three have been incapacitated.

In view of the danger consideration might be given to a regular medical inspection of the men employed.

Table showing the amount of arsenic in the hair, nails and urine of three men employed spraying prickly pear with arsenic pentoxide, chiefly in a water solution, but sometimes in a sulphuric acid solution :—

Number.	Arsenic in hair, mgms. per 100 gms.	Arsenic in nails, mgms. per 100 gms.	Arsenic in urine, mgms. per litre.	Time since last exposure in days.	Remarks.
1	28.0	140.0	1.0	At work ...	Three months after first attack.
	8.3	160.0	.02	39	
2	23.0	50.0	0.30	1	First attack.
	800.0	800.0	0.40	At work ...	Ten months after return to work. Recurrence.
	2.9	50.0	0.02	58	
3	24.0	125.0	...	14	
	...	122.0	...	34	
	...	...	0.02	37	

* Badham, Charles.—“Basophilia and Lead Excretion in Lead Poisoning.” *Med. Journ. of Aust.*, 16th December, 1933, p. 816.

A boilermaker and oxywelder employed at a window glass manufacturing works showed 7.1 mgms. of arsenic per 100 grams of hair, and complained of pains in the stomach, vomiting, diarrhoea, soreness of the muscles of legs and arms, sleeplessness and loss of weight. His blood count was normal. He had been engaged mainly on repair work, and had apparently been affected by arsenic. In previous years, batch mixers, suffering from arsenical and lead poisoning, have been seen from other glassworks.

A man employed screening arsenic trioxide, to be used for the manufacture of sheep dip, contracted a dermatitis of the face. The use of a mask over the face as a protection against the dust probably caused the dermatitis by the sweating produced.

TOXIC JAUNDICE FROM ARSENIURETTED HYDROGEN.

A man engaged in the extraction of gold by the cyanide process (McArthur and Forrest) met his death from arseniuretted hydrogen. He mixed sulphuric acid with zinc filings in a vat. It was found that the zinc filings contained arsenic, and this was the source of the arseniuretted hydrogen. Sulphuric acid and zinc liberates nascent hydrogen and, in the presence of arsenic, arseniuretted hydrogen is given off. Two cubic inches of arseniuretted hydrogen contain $1\frac{1}{2}$ grains of arsenicum. A lethal dose of this can be got from 250 parts per million parts of air inhaled for 30 minutes (for comparison hydrocyanic acid gas 150 parts per million inhaled for some time is fatal). Signs of poisoning were collapse, hæmolytic jaundice, vomiting, blood-stained urine, intense rapidly developing anaemia.

DERMATITIS.

Baker's Dermatitis.—Until 1929–30 baker's dermatitis in New South Wales was practically unknown, but in these years over fifty cases occurred among doughmakers, and an account of this outbreak is given in the annual report for 1930. The cause of the outbreak was the use of ammonium persulphate in certain yeast foods or accelerators. The Sydney manufacturers of accelerators containing persulphates were asked to discontinue the use of this chemical, and agreed to do so; and from October, 1930, till June, 1933, very few cases of baker's dermatitis occurred, and these few were sequelae of attacks in 1929–30.

About June, 1933, several doughmakers were sent to me suffering from a dermatitis similar in all respects to the 1929–30 cases. It was found that the first case was due to the use of an accelerator manufactured in another State, and which contained 0.8 per cent. ammonium persulphate, and that the second resulted from using a flour containing one part in 2,000 ammonium persulphate. Up till October 1933, four other doughmakers and a pastrycook were affected, and several of the samples of flour submitted by the men or obtained by the Board of Health inspectors were found to contain from 1 in 2,000 to 1 in 5,000 parts of ammonium persulphate. In the other cases, although the dermatitis was definitely occupational and similar in appearance to the other cases ammonium persulphate was not found in the flour or accelerator produced, but it is often difficult to prove definitely that a baker's dermatitis has been caused by the raw materials he has used as master bakers frequently change their flours, etc., and also the manufacturers may use ammonium persulphate intermittently.

Ammonium persulphate was found in a number of samples of flour collected by this Department at my request, and action was taken to forbid the use of this chemical.

The dermatitis was similar to that observed in the 1929–30 outbreak. The milder cases when first seen showed the erythematous or erythematopapular stage, and the more acute cases were erythematovesicular or characterised by exudation and crust formation. The distribution was, in most cases, on the exposed parts, viz., the dorsal aspect of hands, the flexor aspect of wrists and forearms. In other cases the rash also occurred on the extensor aspect of forearms and the face and neck, and in some cases the lower abdomen, thighs and upper arms were affected.

Rubber Dermatitis.—For a few years dermatitis in the rubber industry has not given much trouble; but this year there has been a mild outbreak, most of the cases coming from one factory. At the request of the management of this company the works were visited on several occasions and the men affected examined, but it has not been possible up till the present to incriminate any of the chemicals used. A number of the men affected have worked in the tire-curing department, but cases have also originated in other departments.

Dermatitis due to Various Substances.—At the request of the Chief Inspector of Factories a chrome anning works was inspected, and an examination made of certain of the personnel who were suffering from skin rashes.

Despite the many solutions used which are irritant to sensitive skins the incidence of skin rashes was very low, only three cases being reported in a period of seven months, two probably due to chrome, and the third an ulcerated arm, said to be caused by arsenic. The safeguard recommended was the early and continued protection of cuts and scratches by dressings, collodion, finger stalls, etc., and the exclusion of individuals who develop recurrent skin rashes from the processes which produce them.

A female employee engaged in stemming tobacco in a tobacco company developed a rash on the arms and neck, which later spread to her body. It was attributed to the tobacco dust.

At the State Abattoirs a man employed cleaning casings for sausages was affected by a dermatitis of the arms and neck. The cause was not clear, but may have been due to salt.

A case of dermatitis in a rural worker from working amongst "dogweed" (*Cassinia acullata quinque-faria*), was investigated at the request of an insurance company.

In a chemical works three employees engaged in the manufacture of kerosene fly-killer were affected with a dermatitis due to pyrethrum. Similar cases have occurred in previous years.

VENTILATION.

The examination of cinema theatres has been carried out when required by the Chief Secretary's Department. Owing to unfavourable economic conditions the attendances have been smaller than usual, and investigations have been limited to cases of complaint of ill-ventilated or to new theatres. In several cases the attendances were so small that the usual method of estimating the air change by the carbon dioxide readings were rendered valueless, and it was recommended that a further investigation be made when conditions were more favourable.

In one instance it was pointed out that the theatre was not properly ventilated because the ventilating plant is only run intermittently, and that this practice was followed in many other Sydney cinemas.

Apart from the cost factor it is probable that the present out-of-date regulation, which requires eight changes of air per hour irrespective of the attendance and outside conditions, is partly responsible.

Only one hall outside the metropolitan area was examined for ventilation. This had been examined several times previously and reported on adversely. Alterations had been made to increase the natural ventilation, but an opinion was expressed that satisfactory conditions would not be obtained without the provision of through ventilation, or a mechanical plant.

Reports on the ventilation of restaurants, etc., were made for the City Health Officer, and recommendations made at the request of the Town Clerk for the proposed new regulations under the City of Sydney New Building Bill.

In regard to a proposal to enlarge an existing building of one of our large hospitals, we were asked to advise on the effect that the new building would have on the amount of direct sunshine received on the ground floor and first floor ward verandahs on the northern side of the buildings. Beds were provided on both verandahs for the convalescent patients, and it was essential that the direct sunlight should not be obstructed to any marked degree. In making the computations three positions on the verandahs were selected, and it was found that in midwinter the average loss of sunlight would be 2 hours 40 minutes more than with the present buildings and 5 hours 40 minutes when compared with a verandah similarly situated but unobstructed by other buildings. A point 50 feet from the centre of the verandah would, in midwinter, not receive direct sunlight after 8.55 a.m. The astronomical knowledge of my Physicist Assistant enabled this problem to be solved.

AMENDMENTS OF PRESENT FACTORY REGULATIONS.

At the request of the Chief Inspector of Factories I recommended that certain alterations be made in the regulations dealing with the ventilation and illumination of factories and shops. These regulations would control the air change for factories not requiring special conditions for the process, and maximum temperatures and humidities to be allowed for certain processes, chiefly in textile factories, and minimum illumination over the working area and in parts that may, at any time, be used by an employee.

A number of minor inquiries or investigations were made, several of which are worthy of recording.

A coal miner complained that when working in badly ventilated parts of the mine after blasting with gelignite he suffered from headaches, weakness in the legs, and dry vomiting, and appeared to be affected by carbon monoxide and nitrous fumes.

At the request of the Commonwealth Arbitration Court advice was given regarding the effect of so-called "dolomite lime" on the health of waterside workers engaged in unloading it. It appeared to be a mixture of native carbonates like chalk and carbonate of magnesia. It was not alkaline, insoluble and not irritating to the mucous membrane, and it was not considered that it would injure the skin, health of the men, or their clothes.

A man employed grinding rice hulls for fifteen months complained of cough with sputum sometimes blood-stained, sore eyes, and skin rashes. For the last three weeks he had asthmatical attacks at night. After examining him, the conclusion was reached that he had been affected by the dust from his work.

SECTION II.

I.—Metropolitan Combined Sanitary Districts of Sydney.

Report of the Medical Officer of Health for the Year 1933.

J. S. PURDY, D.S.O., M.D., C.M. (Aberd.), D.P.H. (Camb.), F.R.S. (Edin.), F.R.San.I.

To the Director-General of Public Health.

Sir,

I have the honour to report on the health conditions of the Combined Sanitary Districts of the Metropolitan Area of Sydney for the year 1933. The infantile mortality rate of 36·91 per 1,000 births was the lowest recorded in the Metropolitan Combined Area. The Combined Districts for the purposes of health administration consist of the metropolis, together with seven outside metropolitan districts. The metropolis of Sydney proper and suburbs, includes the City of Sydney and forty-nine municipalities. The outside metropolitan districts, which are separately dealt with statistically, include five municipalities, together with Warringah and Hornsby shires.

From the beginning of 1927 deaths have been distributed by the Government Statistician to the locality, where known, in which the deceased permanently resided, and births to the place of permanent residence of the mother.

At the Census of 30th June, 1933, the population of the Metropolitan Combined District was 1,304,580, and of the City of Sydney, 88,312. The Government Statistician's estimate of the population at 31st December, 1933, was 1,310,080, and the mean population 1,304,580.

Births.—18,152 births were registered in the Metropolitan Combined area in 1933, equivalent to a rate of 13·91 per 1,000 of population. Male births numbered 9,363; females, 8,789, being a ratio of 107 males to 100 females. There were 953 ex-nuptial births, equivalent to 5·25 per cent. of the total births, or ·73 per 1,000 of the population. The birth rate was the lowest hitherto recorded in the metropolitan district.

Deaths.—There were 12,259 deaths registered in the Metropolitan Combined Area in 1933, giving a rate of 9·40 per 1,000 of the population. (See Table I on page 68.)

There were 670 deaths of children under one year of age, equivalent to a rate of 36·91 per 1,000 births.

CAUSES OF DEATHS IN THE METROPOLIS.

Diseases of the Heart.—The group, Diseases of the Heart, again occupies the premier position as the chief cause of death, accounting for 2,777, or a rate of 225 per 100,000 in 1933. There were 1,251 deaths from heart diseases among females to 1,526 among males; 25 males and 16 females were under 25 years of age; 32 males and 30 females from 25 to 40 years; and 727 males and 495 females from 40 to 70 years; and 742 males and 710 females over 70 years. Occupation is probably the main factor in the difference in the higher rates in men than in women after 40 years of age.

With regard to rheumatic affections, acute and chronic rheumatism, chronic arthritis, etc., accounted for 45 deaths in 1933. Eleven of the 45 deaths were of persons under 20 years, 8 were 21–40 years; 12 41–70 years, and 13 over 70 years of age, and 1, age not stated.

One hundred and eighty-four males and 82 females died from diseases of the coronary arteries; 10 males and 6 females died of angina pectoris, with record of coronary artery disease, and 63 males and 41 females of angina pectoris, which again illustrates the greater frequency in later life of degenerative changes in the arteries of the male.

In 1933, 23 males and 5 females were reported as having died from syphilis, of whom 2 males and 2 females were under one year of age.

Six men and 3 women died from alcoholism (acute and chronic) the ages of the women were 35–44.

Cancer, with its heavy toll of 1,499 deaths (738 males and 761 females), still baffles intensive and extensive research, and was again second on the list of killing diseases. The continued increase in the number of deaths from cancer emphasises the importance to the public of the oft repeated warning that there should be no delay in seeking skilled advice on appearance of any suspicious symptoms.

Bright's Disease (Acute and Chronic), is third on the list of "Causes of Death," and claimed 743 victims, 399 males and 344 females.

Pneumonia holds fourth place, with 731 deaths (males, 408; females, 323); 288 deaths were due to broncho-pneumonia, 300 to lobar pneumonia, 137 to pneumonia (unspecified), and 6 to capillary bronchitis.

Tuberculosis.—The number of deaths from all forms of tuberculosis in the metropolis proper was 637, of which 578 were due to tuberculosis of the lungs; 20 to tubercular meningitis; and 39 to other tubercular diseases. These figures include deaths of former metropolitan residents which occurred at sanatoria and other institutions. During the past forty years there has been a reduction of the death rate of pulmonary tuberculosis by more than half. A better standard of living and, above all, more appreciation of living and sleeping in the open air, have all contributed to the ever-improving record.

Deaths from Accidents.—It is an indictment against modern conditions of living that the next most common cause of death is that due to accidents. In 1933, 448 persons (325 males and 123 females) were fatally injured, a reduction of 21 on the figures for 1932.

Accidents from railways and tramways caused 38 deaths, of which 10 were women; other land transport accidents, 14 (10 males and 4 females); motor vehicles, 166 (131 males and 35 females); or 13 less than in 1932.

TABLE I.

SHOWING Population, Density of Population, and Deaths from certain Diseases in the Municipalities of the Metropolitan Combined Sanitary Districts for the year 1932. Deaths occurring in hospitals and institutions have been distributed to their proper districts.

Municipality.	Estimated Mean Population 1933.	Mean Density of Population to the acre.	All Causes.	Diarrhoeal Diseases, including Enteritis.	Epidemic Diseases.	Tuberculosis of Respiratory System.	All Tubercular Diseases.
			1933.	1933.	1933.	1933.	1933.
City of Sydney	88,320	27·2	1,097	7	20	70	77
Alexandria	9,020	8·6	92	...	4	4	5
Amundale	12,210	35·3	110	1	2	7	9
Ashfield	39,360	19·3	411	2	10	12	14
Auburn	20,110	7·8	168	4	8	6	7
Balmain	28,270	28·9	283	4	13	7	7
Bankstown	25,360	1·3	192	4	5	8	8
Bexley.....	20,540	10·8	137	...	3	10	10
Botany	8,290	3·8	53	...	1	1	2
Burwood	19,370	17·5	194	1	3	10	10
Canterbury	79,060	9·6	574	8	15	44	48
Concord	23,220	8·5	138	1	3	12	12
Darlington	3,050	56·5	18	...	.....	.....	.....
Drummoyne	29,210	14·9	232	...	5	9	11
Dundas	6,020	2·2	20	...	.....	1	1
Eastwood	3,030	1·0	45	...	2	1	2
Enfield	14,780	8·8	121	...	5	6	6
Ermington and Rydalmere	2,360	1·2	27	1	3	1	1
Erskineville	6,649	35·7	64	1	1	4	4
Glebe	19,890	38·4	214	1	5	12	12
Granville.....	19,720	4·9	177	6	9	11	13
Holroyd(Pitt and Merrylands Wards)	8,430	3·8	67	1	2	4	5
Homebush	3,190	5·4	64	...	1	3	4
Hunter's Hill	8,990	6·4	79	1	1	3	3
Hurstville	22,670	3·7	176	1	4	8	9
Kogarah	30,650	6·4	197	1	1	10	10
Ku-ring-gai	27,940	1·4	242	1	3	16	20
Lane Cove	15,130	5·9	127	1	2	13	13
Leichhardt	30,220	26·2	293	2	6	16	18
Lidcombe	17,380	3·3	373	7	4	11	15
Manly	23,260	7·5	237	2	10	6	7
Marrickville	45,380	24·0	418	2	6	14	18
Mascot	14,360	6·5	121	1	7	8	9
Mosman ..	23,670	11·1	236	1	11	3	3
Newtown	25,290	52·7	259	1	2	13	14
North Sydney	49,750	19·7	524	...	21	18	18
Paddington	24,690	58·7	299	...	11	23	25
Parramatta	18,080	8·1	264	5	7	15	15
Petersham	26,940	31·7	280	3	6	16	17
Randwick	78,900	9·3	735	3	8	44	47
Redfern	18,840	46·6	228	5	4	18	18
Rockdale	39,120	7·7	277	2	4	6	6
Ryde	27,860	4·0	174	5	4	11	12
St. Peters	12,550	13·9	105	...	4	7	8
Strathfield	12,150	6·6	106	1	3	3	4
Vaucluse	7,210	9·1	54	...	2	2	2
Waterloo.....	11,660	14·1	108	3	5	6	6
Waverley	55,910	25·6	467	3	14	24	24
Willoughby	42,520	7·8	366	1	8	15	20
Woollahra	34,740	18·4	337	3	11	5	8
Total Metropolis	1,235,400	7·9	11,580	97	289	578	637
Cabramatta and Canley Vale	6,110	.....	72	2	...	2	2
Fairfield	8,710	.....	64	...	2	4	4
Holroyd (Guildford and Wentworth Wards)	7,490	.....	57	1	3	2	2
Hornsby Shire	22,600	.....	233	1	10	17	20
Ingleburn	1,890	.....	14	...	1	.....	.....
Liverpool	6,320	.....	107	3	3	6	6
Warringah Shire... ..	16,060	.....	132	1	1	7	7
Total	69,180	.....	679	8	20	38	41
Total Combined Metropolitan... Sanitary Districts	1,304,580	.....	12,259	105	309	616	678

Deaths from Epidemic Diseases.

Typhoid fever caused five deaths in 1933.

Measles showed an increase from 4 in 1932 to 27 in 1933.

Whooping Cough caused 8 deaths in 1933, or 11 less than in 1932. All the deaths were of children under five years, and 5 were under one year.

Scarlet Fever deaths numbered 37, an increase of 11 on the previous year. The rate was 2.99 per 100,000 of the population. Fifteen of the deaths were of children under five years of age.

Diphtheria.—There were 72 deaths from diphtheria, one less than in 1932; 42 deaths were of children under five years of age.

Other epidemic diseases.—*Influenza*—There were 96 deaths from influenza. *Infantile paralysis* caused 1 death. *Epidemic Cerebro-Spinal Meningitis* accounted for 4 deaths. *Encephalitis Lethargica* accounted for 9 deaths.

The infectious diseases to show decreases in 1933 were typhoid fever, infantile paralysis, whooping cough and diphtheria, whilst measles, influenza and scarlet fever showed increases.

Diabetes accounted for 223 deaths, an increase of 19 on the number (204) in 1932. The death rate for 1933 was 18.05 per 100,000, contrasted with a rate of 9.9 per 100,000 in 1911. This increase corresponds to that observed in almost all other civilized countries. In New York City the figures for 1931 were 50 per cent. higher than in 1911. The increased per capita consumption of sugar is suggested as a factor in the increased incidence. In 1933 there were 132 deaths of females to 91 in males. The notable increase of deaths in females is most marked in the later age periods.

Diabetes is a disease of adult life, and occurs at that period when people are most productive in an economic sense. It is unfortunate that it is not more frequently discovered in its incipieney; routine examinations of urine for sugar are advisable in overweight individuals of forty years or over. The introduction of insulin treatment, with seientific control of the diet and intelligent co-operation of the patient, should considerably prolong the lives of those affected.

Diarrhœa and Enteritis caused the deaths of 44 children under 2 years of age; and 53 of persons 2 years and over.

Maternal Mortality.—In the metropolis there were 33 deaths from puerperal septicaemia (including 15 abortions with septic conditions), and 83 deaths from other puerperal diseases.

Infantile Mortality.—There were 629 deaths of infants under 1 year of age in the metropolis during 1933, whilst the births numbered 17,083, giving an infantile mortality rate of 36.82 per 1,000 births—the lowest recorded in Sydney.

Of the deaths in the first year of life, no less than 345 occurred in the first week of life, and 432 (or 55 and 68 per cent.) in the first month.

Looking at the rates of infantile mortality in Sydney for the past fifty years we see a reduction from 192 per 1,000 in 1880 to 50 in 1930; 44.34 in 1931, 39.01 in 1932 and 36.82 in 1933.

The fall in the infantile mortality rate for the last three years below 50 per 1,000 is eneouraging following the intensive campaign for its reduction by the Baby Welfare Centres and the Royal Society for the Welfare of Mothers and Babies.

TABLE 2.—(a) Showing Deaths of Children under 1 year per 1,000 births from 1880 to 1933, and (b) Deaths of Infants in the Metropolis from various causes, 1920-1933.

(a)—Infantile Mortality per 1,000 Births, 1880-1933 at 10 year intervals.

1880	192	} Dairies Supervision Act passed 1886.
1890	...	...	...	...	135
1900	109	Public Health Act passed 1896.
1910	82	} Visiting nurses first appointed 1904.
1920	...	...	...	...	74
1930	50	} Maternal and Infant Welfare Division established 1923.
1931	...	...	...	...	44
1932	...	...	...	...	39
1933	...	...	...	...	37

(b)---Deaths of Infants in the Metropolis from various causes 1920-1933.

(The accompanying graph shows the infantile mortality rate during the period 1909-1933.)

Cause of Death.	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.	1930.	1931.	1932.	1933.
Measles	20	3	1	6	2	1	8	1	23	12	15	2	1	1
Scarlet Fever	1	...	...	...	...	2	2	5	5	3	2	2	1	2
Whooping cough	121	27	24	24	16	74	38	70	16	79	34	70	11	5
Diphtheria	11.	11	10	12	5	12	11	8	8	14	7	10	7	4
Influenza	6	7	1	9	4	8	5	5	3	3	2	4	4	3
Cerebro-spinal meningitis	2	1	3	2	3	2	6	3	2	...	2	1	1	1
Tuberculosis meningitis	1	9	8	2	6	3	5	4	2	10	5	3	...	2
Other tuberculous diseases	3	5	2	2	1	5	5	3	5	4	4	1	2	2
Meningitis	7	14	10	19	20	15	18	17	12	14	11	4	8	5
Convulsions	22	18	15	11	13	12	25	19	5	4	4	7	1	...
Other nervous diseases ...	8	4	1	2	2	2	9	4	2	5	...	2	4	6
Bronchitis	26	20	21	29	16	18	10	13	13	19	14	11	5	5
Pneumonia	126	101	132	129	139	141	105	146	108	164	82	92	54	75
Other respiratory diseases	12	6	2	2	4	3	1	5	7	3	1	2	3	1
Diseases of the stomach	11	12	6	6	5	5	6	8	3	1	2	1	1	3
Diarrhœa and enteritis ...	443	385	257	407	224	211	281	163	181	144	219	105	59	36
Intestinal obstruction and hernia	10	17	7	8	9	9	17	5	6	12	5	6	6	7
Bright's Disease .....	...	2	2	...	1	...	1	1	...	2	1	2	1	1
Prematurity	440	379	362	379	382	355	388	313	320	379	353	244	234	221
Congenital Malformations	102	91	114	99	100	93	95	100	76	101	73	64	76	79
Congenital Debility	121	130	118	104	125	87	90	91	84	93	64	38	28	28
Injury at Birth	39	44	49	44	50	47	58	49	60	58	64	73	65	49
Other developmental dis- cases	57	67	70	52	62	71	58	48	48	61	58	44	68	45
Accident	12	9	7	10	13	11	7	13	8	20	13	10	10	17
All other causes	57	52	57	47	60	68	66	67	45	58	60	48	36	31
Total	1,658	1,414	1,279	1,405	1,262	1,255	1,315	1,161	1,042	1,263	1,095	846	686	619

INCIDENCE OF INFECTIOUS DISEASES.

Scarlet Fever.—2,690 cases and 37 deaths were notified in the Metropolitan area in 1933; 3,031 cases and 26 deaths in 1932.

Since Scarlet Fever was first made notifiable in 1898, there has been a series of five yearly periods of comparative quiescence followed by similar periods of treble and quadruple incidence, with a twelve yearly period of maximum incidence, *e.g.*, in 1903, 1915 and 1927, generally ascribed to the appearance of children who have not acquired immunity by a previous attack. Notification, isolation and disinfection have failed to prevent the spread of this disease. During the year there was no special outbreak associated with any definite milk supply as has sometimes been the case in previous years.

Diphtheria.—2,067 cases and 72 deaths were notified in the metropolitan area in 1933; and 2,049 cases and 73 deaths in 1932. The attack rate was 1.5 and the death rate .04 per thousand in 1933. The period of greatest susceptibility to diphtheria is from twelve months to six years of age.

In connection with an outbreak in a Children's Convalescent Home, the history was that of a child of six, a heart case from the Royal Alexandra Hospital for Children, developed diphtheria, and four other children contracted the disease. The whole of the forty inmates and twenty adults were swabbed; six were found to have diphtheria bacillus in their throats or noses, and were notified. None of these six positive cases had definite clinical symptoms of diphtheria. Later, a further case, a housemaid, was notified from the Convalescent Home, and removed to hospital. In this case, although clinically diphtheria, repeated examinations proved negative. The whole of the staff and patients were again swabbed, but were negative. The difficulty of dealing with an outbreak of diphtheria where there are so many carriers, each possibly an infecting agent, was added to by the occurrence of measles.

In connection with seven notifications from the Convalescent Home in November, six were the result of the routine swabbing, and only one case had definite clinical signs of diphtheria. It would appear that the admission to an infectious diseases hospital of healthy contacts who have positive swabs, or healthy carriers discovered by a process of wholesale swabbing, should be discouraged.

For the prevention of diphtheria, apart from inculcation and observance of the rules of personal hygiene, the main measure is immunisation. It is considered that no influence upon the herd immunity can be expected until at least 35 per cent. of those at risk are immunised.

Infantile Paralysis.—In the metropolitan area in 1933, there were 8 cases with 1 death, in contrast to 148 cases with 11 deaths in 1932. The incidence of this disease as shown by a graph reached peak periods in 1916, 1923, 1929 and 1932.

Typhoid Fever.—There were 51 cases with 5 deaths in the metropolitan area in 1933; in 1932 there were 102 cases with 8 deaths. The attack rate of .03 per 1,000 is the lowest recorded in this area.

The marked reduction of the morbidity and mortality from typhoid fever in Sydney is an index of progress in communal sanitation. The typhoid death rate fell from 51.3 per 100,000 for 1916–1920 to 2.8 for 1921–1926, and for the past three years has been 0.6 per 100,000.

Nearly a quarter of the metropolitan population is still without the advantage of sewerage for their dwellings. The population of sewered areas at 30th June, 1933, was 1,037,950, and of unsewered areas 266,565.

Epidemic Cerebro-spinal Meningitis.—There were 16 cases and 4 deaths notified in 1933; in 1932 there were 23 cases and 5 deaths.

SANITARY SURVEY.

During 1933 special attention was given to the disposal and destruction of nightsoil and garbage.

There are still in the metropolitan area 24 burial depots, 9 dumps where nightsoil is passed into the sewers, two localities where it is tipped into the sea, and one depot where it is converted into poudrette by drying.

An endeavour was made to secure a dump into the sewer for Bankstown at the corner of Juno-parade and Punchbowl-road, but it was considered that there was not sufficient flow of water in the sewer. It was found necessary to continue burial at the Milperra Road Depot, about which a Local Government inquiry was held. Improvements have been made at the depot, more particularly with regard to the disposal of the waste water from the washing shed. A concrete sump has been provided fitted with penstocks so as to divert the water over different areas as required. Macadamised roads have been made between the disposal areas so that vehicles can be brought up to the trenches. Boundary protective trenches have also been deepened to prevent flooding of the area. Strict supervision is kept over the depots to ensure that the pans are steamed and the nightsoil properly covered.

There are only three municipalities which do not dispose of nightsoil within their own areas, North Sydney, Mosman and Drummoyne. Arrangements were made for disposal in Warringah Shire in the case of North Sydney and Mosman, and at the Concord Dump for Drummoyne.

Incineration of Garbage.—So phenomenal has been the increase of population, which has been trebled in the metropolitan area of Sydney since 1900, and doubled during the last twenty years, that the progress in sanitation has with difficulty kept pace with it. More especially does this apply to the disposal of household and other refuse, generally termed garbage.

The most hygienic method of disposing of household garbage is by incineration. In 1933 a destructor was erected in the Glebe municipality, which previously had its refuse punted to sea, a cause of complaint owing to refuse at certain seasons and tides being washed on to the beaches. There are now seventeen destructors in the Metropolitan area.

Inquiries before the Metropolitan Land Board were held with regard to a site for a destructor for Mosman (the latest proposal for which is to erect a plant in Warringah Shire), and with regard to the erection of a destructor for the city of Sydney in Moore Park, to replace plant erected in 1901. Owing to the disapproval of the Moore Park site, the destructor is being erected at Pyrmont alongside the plant erected in 1910.

In some cases controlled tipping has satisfactorily reclaimed waste land. This is well illustrated at Concord, where St. Luke's Park with its cricket oval, and Edwards Park with its football area, have replaced the former offensive swamp area. Other recreation areas reclaimed with raw garbage, are Bexley Park with a playing area; Lakemba Park; Amderon Park, Neutral Bay; Balmoral Park, Mosman; Rawson Park, St. George's Heights (playing area); Park at High and Botany streets, Randwick (putting green).

Incinerator Residue has also been used largely for improving parks and playing areas, such as Wicks Park, Marrickville; Steel Park, Tempe Reserve; Morton Park, Dulwich Hill; Henson Park, formerly Daly's old brick pit, Marrickville; Clampton Park, Canterbury.

Bathing and Swimming Baths.—Modern freshwater swimming baths with a complete system of water purification have been installed at Enfield and Bankstown.

INSPECTION OF RESTAURANTS, TEA-ROOMS, BUTCHERS' SHOPS, COMMON LODGING-HOUSES, BARBERS' SHOPS, ETC., IN CONNECTION WITH THE GENERAL ADMINISTRATION OF THE CITY HEALTH OFFICER'S DEPARTMENT.

Number of premises, City of Sydney, 22,120; restaurants, 393; tea-rooms, 256; grill-rooms, 66; fruit shops, 225; street fruit stands, 137; fish shops, 83; butchers' shops, 115; barbers' shops, 547.

Summary of routine work during 1932 and 1933:—

	1932.	1933.
1. Complaints received and dealt with; inspections, etc.	693	607
2. Inspections, house-to-house, re-inspections, restaurants, streets, lanes, etc.	43,497	43,841
3. Inspections of butcheries, meat depots, poulterers, etc.	18,726	15,807
4. Inspections under Pure Food Act Regulations	26,004	30,965
5. Inspections of common lodging-houses	25	412
6. Investigations of smoke nuisance	493	303
7. Investigations of infectious diseases	294	239
8. Notices served	1,843	1,544
9. Number of premises referred to the City Building Surveyor	129	112
10. Plans reported on	559	595
11. Number of premises visited by rat-catching staff	9,208	7,760
12. Number of complaints investigated by rat-catchers	377	442
13. Number of traps set and poison baits laid	65,624	55,574
14. Number of rats caught	5,463	5,029
15. Number of milk samples taken for analysis	1,003	1,000
16. Disinfection of premises	275	229
17. Prosecutions against offenders (Health Department only)	61	39
18. Total amount of fines inflicted	£157 18 0	£102 10 0

Legal Proceedings Undertaken.—In 1933 were respectively, Sydney Corporation Act and By-laws, 4; Pure Food Act, 35; Total, 39.

Milk Samples.—Of 1,000 samples of milk taken in the City in 1933, 6 were found not in conformity with the standard. There were two warnings and four convictions for selling milk deficient in milk fat.

Septic Tank Installations.—Number of septic tanks inspected in 1933 and approved by the Board of Health, 133; sites inspected as to suitability for installing septic tanks, 325 in 1933. In 1933 the number approved was 90; sites inspected 220.

2.—Hunter River Combined Sanitary District.

REPORT OF THE MEDICAL OFFICER OF HEALTH FOR THE YEAR ENDED 31st DECEMBER, 1933.

Staff at 31st December, 1933.—Dr. H. G. Wallace, Medical Officer of Health, 1 sanitary inspector, 1 nurse inspector, and 1 clerk.

Inspector G. A. Garrow was transferred to Sydney during the year, and the vacant post of senior sanitary inspector was filled by the appointment of Mr. J. C. Meddows from Head Office staff.

Description.—The Hunter River Combined Sanitary District included, in 1933, eighteen municipalities and five shires, together with the harbour of Port Hunter. The area is approximately 2,000 square miles. Each Municipal and Shire Council is a local authority under the Public Health Act and employs one or more health inspectors.

The Medical Officer of Health and staff exercise a general supervision over the health of the district, and act in an advisory capacity to the local councils.

Vital Statistics.—Tables showing details of population, births and deaths in each area are shown elsewhere.

The population of the Combined Districts at the census of 30th June, 1933, was 210,970.

The birth-rate for the Combined Districts in 1933 was 17·23 per thousand mean population. The falling birth-rate is apparently an outcome of the economic depression.

In 1933 the number of ex-nuptial births was 168, or 4·62 per cent. of the total births. The death rate for the district in 1933 was 8·30.

The chief cause of death was diseases of the heart, causing 396 deaths. Of these, 344 were at ages over 50.

Next in frequency came cancer, 187 deaths; pneumonia, 115 deaths; nephritis, 115 deaths; accidents, 94 deaths; diarrhoea and enteritis in 1933 caused 28 deaths, of which 18 were at ages under 5 years.

Infectious Diseases.—Details of cases of notifiable infectious diseases are given below :—

DIPHTHERIA.

Three hundred and ninety-seven cases of diphtheria were notified in 1933, compared with 486 in 1932, and 453 the annual average for the preceding five years. Although the disease was less prevalent than in 1932, the serious overcrowding of isolation wards in the Newcastle district again occurred. There can be no doubt that increased isolation accommodation at the Newcastle and Wallsend hospitals is one of the most urgent health needs of the district.

Fifteen deaths from diphtheria were recorded during 1933, showing a fatality rate of 3·78 per cent. The rate of incidence per thousand of population was 1·88 compared with 1·51 for the whole State.

No further use was made of the Schick Test with immunization of susceptibles, but it is hoped that modern methods of immunization will be adopted at no distant date on lines similar to those being followed in neighbouring States.

Increased facilities for rapid diagnosis will shortly be available, as the district laboratory, being erected at the Newcastle Hospital will probably be opened during 1934.

SCARLET FEVER.

Six hundred and four cases of scarlet fever were notified in 1933, compared with 517 in 1932, and an annual average of 276·6 in the previous five years. The rate of incidence per thousand of population was 2·86.

The number of cases recorded in 1933 was the highest since 1910. Nine deaths were recorded.

The increased prevalence of scarlet fever during 1933, which mainly affected Newcastle and adjacent areas, was no doubt partly due to the very inadequate facilities for isolation of patients, only a very small proportion being admitted to hospitals, and discharged thence as early as possible, all the others being treated at home, where adequate isolation is difficult and often impossible.

TYPHOID FEVER.

Twenty-six cases of typhoid fever were notified during 1933. In at least two of these, the diagnosis was extremely doubtful. Although slightly higher than the low record of 22 cases in 1932, the number of notifications shows an incidence rate of 0·12 per thousand of population, which is low compared with that for the whole State. The extension of water and sewerage facilities to country towns, and increased attention by local authorities to sanitary disposal of night-soil and cleansing of pans in unsewered areas, is no doubt largely responsible for the diminution of typhoid in recent years.

Anti-typhoid inoculation was made use of by the medical attendant in several instances for protection of contacts, and is apparently becoming better known among the public.

PULMONARY TUBERCULOSIS.

Sixty-two cases of pulmonary tuberculosis were notified during 1933, compared with 77 in 1932, and an annual average of 72·8 during the previous five years. Forty-seven deaths occurred from pulmonary tuberculosis in 1933.

Control of the Newcastle anti-tuberculosis dispensary was taken over from this department by the Newcastle Hospital on 1st April, 1933. The services of the nurse-inspector on the staff of the Medical Officer of Health continued, however, to be made available to assist the medical officer in charge of the dispensary and to visit patients as required.

PUERPERAL INFECTION.

Ten cases of puerperal infection were notified during 1933, including one case associated with tetanus. No deaths occurred among the reported cases. Closer supervision over records of registered nurses could be kept if the nurse-inspector on the staff of the Newcastle office could be authorised under the Nurses Registration Act to make the necessary inspections.

Nine of the ten cases were treated in hospital. No connection between any of the reported cases through the medium of the nurse or doctor in attendance could be traced on investigation.

OTHER NOTIFIABLE DISEASES.

No case of cerebro-spinal meningitis, infantile paralysis, encephalitis lethargica, plague, leprosy, smallpox or typhus fever was reported during the year.

The rat-catcher formerly employed to procure rats for examination from the water-front at Newcastle, was transferred to the head office staff early in the year.

Arrangements were made by the Navigation Department for two wharfingers at Newcastle to trap rats and submit the carcasses for examination, in addition to laying poison baits. A total of 368 rats and 23 mice were examined during the year, none showing any signs of plague infection.

INFANTILE MORTALITY.

Births in 1933 numbered 3,634, and deaths under 1 year of age 116, giving an infantile mortality rate of 44.30 for the combined districts, compared with 41.75 in 1932.

The chief causes of deaths under 1 year of age were congenital malformations, 24; congenital debility, 7; prematurity, 57; injury at birth, 8; other diseases of infancy, 9; diarrhoea and enteritis, 9; bronchitis, 7; pneumonia, 22.

The eight Baby Health Centres continued their excellent work during the year under review. As they are not under the control of the Newcastle office, a report on their activities appears elsewhere.

MATERNAL MORTALITY.

During 1933 there were 22 deaths from causes connected with childbirth, including 7 from puerperal septicæmia and 5 from toxæmias of pregnancy.

During the twelve months ended 30th June, 1933, 342 cases out of a total of 2,289 female admissions to the Newcastle Hospital were for treatment of abortion. This works out at more than one in every seven, or nearly 15 per cent. of all females of all ages admitted, and represents a tremendous wastage of life, being more than double the number of deaths of live-born infants for the whole district.

VENEREAL DISEASE.

Some improvement in the facilities available for the treatment of syphilis took place at the Newcastle Hospital during 1933, but the need for an adequately equipped clinic for treatment of venereal disease remains. A commencement was made during the year towards erection of a new out-patient building at the Newcastle Hospital, which is to include provision for treatment of venereal disease, but its completion and equipment is apparently many months ahead, and meantime the treatment available is far from adequate.

PRIVATE HOSPITALS.

At the end of 1933 there were 52 licensed private hospitals in the combined districts, containing 287 beds, of which 149 were licensed for the reception of medical, surgical and lying-in cases, and 138 for lying-in-cases only.

These licensed private hospitals are under the control of the Head Office staff, and officers from Sydney visit the combined district at more or less regular intervals for purposes of inspection.

A closer supervision over private hospitals could probably be maintained if the nurse-inspector on the staff of the Medical Officer of Health were authorised to make regular inspections of private hospitals and registered midwifery nurses in the district.

PURE FOOD ACT.

Inspections of shops and warehouses were carried out as usual, for the purposes of the Pure Food Act, by the staff of the Medical Officer of Health. Condemnations of foodstuffs during 1933 included 2½ cwt. of deteriorated foodstuffs and 2,850 packages of assorted foods found unfit for human consumption, which were seized and destroyed under supervision.

MISCELLANEOUS.

Medical examinations of pilots stationed at Newcastle, applicants for widows' pensions and their dependants, applicants for admission to State Hospitals, entrants to the Public Service, workers claiming compensation under the Workers' Compensation Act, young persons seeking employment in factories, applicants for travelling concessions to returned soldiers and others, totalled about 400 examinations during the year.

A limited number of pathological specimens were examined in the laboratory attached to this office, as well as several hundred milk samples. The bulk of the pathological examinations for the district, however, are carried out at the Newcastle Hospital.

A commencement was made during the year with the erection of the pathological laboratory and venereal diseases clinic to be associated with the new out-patient building at Newcastle Hospital.

The Kearsley and Tarro Shire Councils continued to employ meat inspectors to inspect all animals slaughtered at two groups of slaughter-houses in the Maitland District, but an extension of this valuable service is necessary. In virtue of an amendment of the Cattle Slaughtering Act which became law during the year, councils are now enabled, subject to the approval of the Board of Health, to charge fees which will cover the cost of inspection, and it is anticipated that the large populations in Cessnock and the Kearsley Shire will be served by the appointment of more meat inspectors early in 1934. The charges for inspection in Kearsley Shire and Tarro Shire were made uniform towards the end of the year, thus removing a fruitful cause of dispute.

At intervals an inspector from the Head Office Food Inspection Branch visited the district. The results of his work are included in the report of the Chief Inspector under the Pure Food Act.

Milk samples were taken regularly by most of the local councils, and, in addition, the extension of the activities of the Milk Board to Newcastle assisted greatly in maintaining the high standard of the milk supply.

The services of a bacteriologist were made available at intervals to investigate the bacterial content of the Newcastle milk supply, and to determine the presence of *Brucella abortus*. Particulars will be found in the report of the Principal Microbiologist, p. 108.

Under instructions from the Head Office, visits were made outside the district to Kempsey, *re* inspection of aborigines; to Murwillumbah, Lismore and Taree in connection with Workers' Compensation matters; to Dungog *re* sanitary inspections, and to Merriwa in connection with a diphtheria outbreak.

H. G. WALLACE,
Medical Officer of Health.

Broken Hill and District.

REPORT OF THE MEDICAL OFFICER OF HEALTH, W. E. GEORGE, M.B., Ch.M., FOR THE YEAR ENDED 31st DECEMBER, 1933.

The population of Broken Hill Municipal District at 30th June, 1933, was 26,921. There were 559 births for the twelve months, comprising 278 males and 281 females. The deaths numbered 254 (males, 100; and females, 94).

Infectious Diseases.—The monthly incidence of notifiable infectious diseases was as follows :—

1933.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Cases, 1933.
Typhoid and Paratyphoid Fever .....	...	1	...	1	1	...	2	...	...	...	1	2	8
Scarlet Fever	1	1	2	...	3	1	8	4	2	5	3	1	31
Diphtheria	7	8	1	...	3	5	1	...	1	...	1	...	27
Puerperal Infection ...	...	...	...	...	2	...	...	...	...	...	3	...	5

The incidence of notifiable infectious diseases at Broken Hill during the past five years is shown in the following table.

	1929.	1930.	1931.	1932.	1933.
Typhoid and Paratyphoid Fever	64	95	109	20	8
Scarlet Fever	120	19	38	16	31
Diphtheria	96	37	52	32	27
Infantile Paralysis	1	4	4	6	...

Attention is drawn to the marked diminution in the number of cases of typhoid and paratyphoid fever during 1932 and 1933. The low incidence of all notifiable infectious diseases for the same period is remarkable.

During the year inspections were made of the privy accommodation at the various local State schools. This was generally found to be in a very unsatisfactory condition, and a number of recommendations were made. Extensive improvements are now being carried out. Careful attention will be required to ensure proper maintenance of these conveniences in the future.

During the year the Zinc Corporation Limited installed a modern swimming pool, which is supplied with filtered and chlorinated water. This has proved most popular with the employees of the Company. The Municipal Council has decided to modernize the existing municipal swimming baths along the same lines, and, when completed, these baths will supply a healthy relaxation for the people of the city.

The State Laboratory has continued to carry out very useful service. The total number of examinations at the laboratory for the year was 3,393, comprising 357 biochemical tests, and 2,700 bacteriological, and 161 pathological (tissue) investigations. In addition, 175 serological specimens were sent to Sydney for examination. All necessary culture media, swabs, etc., were prepared at the laboratory.

W. E. GEORGE,
Medical Officer of Health.

SECTION III.

Report upon the State Hospitals under the Control of the Director-General of Public Health.

1.—THE COAST HOSPITAL, SYDNEY: REPORT FOR THE YEAR 1933.

The Medical Superintendent to The Director-General of Public Health.

Sir,

I have the honor to submit the following Report on the working of the Coast Hospital during the year 1933.

The Staff during the year has been as follows:—

HONORARY MEDICAL STAFF.

Consulting Physicians.

Charles George Lambie, M.C., M.D., F.R.C.P. (Edin.), F.R.S.E.

Reginald Jeffrey Millard, C.M.G., C.B.E., M.B., Ch.M. (Syd.); D.P.H. (Camb.).

Consulting Surgeon.

Harold Robert Dew, M.B., B.S. (Melb.); F.R.C.S. (Eng.); F.R.A.C.S., F.A.C.S.

Physicians.

Harold Wilson, M.B., Ch.M. (Syd.).

Richard Jeremy, M.B., Ch.M. (Syd.); M.R.C.P. (Lond.).

Sidney Rosebery, M.D., M.R.C.P. (Edin.).

Edward W. Fairfax, M.B., Ch.M. (Syd.); M.R.C.S. (Eng.); L.R.C.P. (Eng.).

Charles Bickerton Blackburn, O.B.E., B.A., M.D., Ch.M.

Honorary Surgeons.

Thomas Maynard Furber, M.B., Ch.M., F.R.A.C.S.

Robert Blakeway Wade, M.D., Ch.M., F.R.A.C.S.

John Colvin Storey, O.B.E., M.B., Ch.M. (Syd.); F.R.C.S. (Eng.); F.R.A.C.S.

Howard Bullock, B.Sc. (Oxon.), M.B., Ch.M. (Syd.); L.R.C.P. (Lond.); F.R.C.S. (Eng.).

Harry C. Rutherford Darling, M.D., M.S. (Lond.); F.R.C.S. (Eng.); F.R.S.P.S. (Glasg.).

Reginald Laidlaw Davies, O.B.E. (M), M.B., Ch.M. (Syd.); F.R.C.S. (Edin.); F.R.A.C.S., Honorary Gynaecological Surgeon.

Wilfred Vicars, D.S.O., V.D., M.B., Ch.M. (Syd.); F.R.A.C.S., Honorary Orthopaedic Surgeon.

Herbert Huff Johnston, M.B., Ch.M. (Syd.), Honorary Ear, Nose and Throat Surgeon.

Robert Joseph Silverton, M.B., Ch.M. (Syd.); F.R.C.S. (Edin.); F.R.A.C.S., Honorary Urologist.

John Charles White Halliday, M.B., Ch.M. (Syd.); D.P.H. (Camb.); F.R.C.S. (Edin.); F.R.A.C.S., Honorary Ophthalmic Surgeon.

Edmund Harold Molesworth, M.D., Ch.M. (Syd.), Honorary Dermatologist.

Herbert Michael Moran, M.B., Ch.M. (Syd.); F.R.C.S. (Edin.); F.R.A.C.S., Honorary Radium Therapist.

Paul Tillett, M.B., Ch.M. (Syd.), Honorary Radiologist.

Kerrod Voss, B.E., M.B. (Syd.), Honorary Assistant Radiologist.

Honorary Anaesthetist.

Philip Sydney Jones, M.S., M.B.

Resident Medical Staff.

Medical Superintendent.—Henri V. D. Baret, B.A., M.B.

Acting Deputy Medical Superintendent.—Cecil J. M. Walters, M.B., Ch.M., (Syd.), F.R.A.C.S.

Senior Medical Officers.—Francis H. Hales Wilson, B.Sc., M.B. (Syd.); Norman J. Symington, M.B., Ch.M. (Syd.); Ralph C. Huntley, M.B., B.S. (Syd.).

Junior Medical Officers—7.

Dispenser, Miss K. M. Legg.

Manager.—William M. Megarvey, J.P.

Matron, Miss C. M. Burne.

First Clerk, William J. Gordon, M.C., J.P.

Sub-Matron, Miss C. M. Dickson, R.R.C.

Sisters, 16; Nurses, 250; other Female Staff, 102.

Asst. Sub-Matron, Miss M. A. R. Hall.

Attendants (Ward), 21; other Male Staff, 59.

STATISTICS.

Detailed tables of statistics will be found in the Appendix, but I may summarise here the more important of these.

I.—The following table is a comparative general statement for 1933 and the previous year :—

	1932.	1933.
Remaining in Hospital on 31st December	780	629
Admitted during the year	10,467	9,632
Total cases under treatment during the year	11,247	10,412
Discharges, including deaths	10,467	9,783
Deaths	723	686
Death-rate per cent. of total discharges	6·9	7·01
Average daily number of occupied beds	773	745
Average stay of patients (in days).....	26·9	26

For the year the number of admissions was 835 less than in 1932, and the average daily number of occupied beds was 745, as against 773 in 1932. The average stay of patients was 26 days.

II. *Infectious Diseases*.—The following table summarises the work of the year in regard to these, and affords a comparison with 1932. In this table the “cases” are cases treated until discharge or death, and the fatality is reckoned on the total cases treated. Cases remaining in hospital on 31st December, 1933, are not included in these figures for the year :—

	1932.			1933.		
	Cases.	Deaths.	Fatality.	Cases.	Deaths.	Fatality.
Typhoid Fever	23	1	4·3	12	2	16·6
Measles	81	3	3·7	264	14	5·3
Scarlet Fever	1,513	17	1·1	1,491	27	1·8
Whooping-cough	3	...	...	1	Nil.	Nil.
Diphtheria	1,170	20	1·7	1,182	28	2·3
Influenza	83	7	8	99	6	6·06
Erysipelas	108	3	12·7	91	3	17·6
Other Epidemic Diseases	53	...	...	24	Nil.	Nil.

Typhoid Fever.—The number of cases under treatment was less than in 1932; the fatality was higher.

Scarlet Fever.—Was less prevalent than in 1932—2,690 cases being notified in the whole metropolitan area during 1933, as against 3,032 during 1932, and the cases treated at the Coast Hospital showed a corresponding decrease. There were 27 deaths.

Diphtheria.—In the Metropolis the cases notified amounted to 2,067 in 1933, as against 2,049 in 1932; and the cases treated at the Coast Hospital were 1,182, as against 1,178 in 1932. The percentage of notified cases which came to this hospital for treatment was—in 1932, 60·7 per cent.; and in 1933, 57·1 per cent. Of the 28 fatal cases, 17 died within seven days of admission. Intubations were performed but there were cases of tracheotomy.

Antitoxin was administered in the hospital to 1,150 cases in the doses shown in the following table :—

Antitoxin.	Cases.	Percentage of Total Cases.	Antitoxin.	Cases.	Percentage of Total Cases.
2,000 units	17	1·2	40,000 units	19	1·34
4,000 „	85	6·3	42,000 „	1	·07
6,000 „	62	4·6	44,000 „ .....	...	...
8,000 „	240	17·70	46,000 „	1	·07
10,000 „	382	28·3	48,000 „	3	·22
12,000 „	130	9·6	50,000 „	8	·58
14,000 „	46	3·4	52,000 „	1	1·07
16,000 „	105	7·7	54,000 „ .....	...	...
18,000 „	4	·29	56,000 „	2	·14
20,000 „	157	11·6	58,000 „ .....	...	...
22,000 „	1	·07	60,000 „	8	·58
24,000 „	4	·29	62,000 „	1	·07
26,000 „	4	·29	64,000 „ .....	...	...
28,000 „	3	·22	66,000 „ .....	...	...
30,000 „	49	3·6	70,000 „	3	·22
32,000 „	2	·14	80,000 „	6	·44
34,000 „	1	·07	100,000 „	3	·22
36,000 „	1	·07	110,000 „ .....	...	...
38,000 „ .....	...	...	40,000 „	1	·07

Altogether 3,055 cases of typhoid fever, measles, scarlet fever, diphtheria, influenza, meningitis, whooping cough were treated. In the Appendix will be found some further details of these cases, viz. :—

Table III.—Age and sex distribution of cases discharged or died during the year.

Table IV.—Number of cases of diphtheria scarlet fever, and typhoid notified within the Metropolis, and the percentage of these cases treated at the Coast Hospital in each of the years 1919–1933, inclusive.

Table V.—Duration of stay in hospital of cases of typhoid fever, measles, scarlet fever, whooping cough, and diphtheria.

Table VI.—Fortnightly admissions of all patients during 1933.

Table VII.—Classification of diseases treated during 1933.

Table VIII.—Operations performed during 1933.

Table XI.—Summary table showing the work of the Coast Hospital and its cost each year from 1889 to 1933.

Summary of Abortion Cases treated at Coast Hospital, 1920-1933.

Abortion.—During the year 714 patients were treated for abortion. The admissions for this condition have increased of late years at a startling rate, as indicated by the following figures, which show the ratio of abortion cases to all female cases treated in successive years 1920-1933, inclusive :—

Year.	Total Females Discharged or Died.	Number of abortion cases Discharged or Died.	Percentage of abortion cases to total Females.	How Discharged.				Fatality per cent of cases of abortion Discharged or Died.	No. of cases of abortion remaining at Hospital end of year.	Total cases treated including those in Hospital at end of year.
				Cured.	Re-lieved.	Unre-lieved.	Died.			
1920	2,635	187	7.09	172	12	1	2	1.07	6	193
1921	3,267	230	7.04	217	5	1	7	3.04	7	237
1922	3,387	345	10.18	329	11	1	4	1.16	9	354
1923	4,247	373	8.78	346	5	2	20	5.36	8	381
1924	4,343	436	10.03	420	9	3	4	.91	12	448
1925	4,556	470	10.31	455	8	...	7	1.49	27	497
1926	5,586	620	11.09	590	24	2	4	.64	10	630
1927	5,770	581	10.07	554	12	2	13	2.24	15	596
1928	5,267	572	10.86	543	15	4	10	1.75	...	572
1929	5,575	755	13.54	717	24	4	10	1.32	9	764
1930	6,090	887	14.56	824	43	4	16	1.8	18	905
1931	6,176	883	14.29	854	21	...	8	.91	21	904
1932	6,081	799	13.1	760	18	3	18	2.3	24	823
1933	5,540	699	12.6	658	15	2	14	2.0	15	714

3. Expenditure.—Table IX gives a detailed statement of the working expenses for 1932 and 1933, from which it will be seen that the total expenditure decreased from £106,842 14s. 4d., in 1932 to £98,291 11s. 6d., in 1933, and the average cost per occupied bed decreased from £138 4s. 5d., to £130 11s. 10d.

Instruction by lectures and demonstrations was, as usual, given to the nurses by the Medical Staff and Matron; and in invalid cookery by a specially engaged teacher (Miss Shepherd), as in former years. Examinations were held in accordance with regulations, and nurses passed as follows :—

First-year examination	...	...	...	...	...	...	...	...	...	44
Second-year	„	...	...	...	...	...	...	...	...	51
Third year	„	...	...	...	...	...	...	...	...	49
Fourth-year	„	...	...	...	...	...	...	...	...	36

During the year 36 certificated nurses left the hospital to take up private nursing, or to take positions in other hospitals, whilst 36 nurses passed the Nurses Registration Board Examination in General Nursing.

Sick leave was granted to 140 nurses, amounting in the aggregate to 4,274 days. Of these nurses some were ill on more than one occasion, there being 197 cases of illness altogether. Of the sick nurses, 12 had diphtheria, 541 days; 20 had scarlet fever, 907 days. One nurse died. All the others recovered satisfactorily.

5. Laboratory.—The following Table summarises the work done in the hospital laboratory month by month. In all, 11,565 cultures were examined for diphtheria. The practice was continued of accepting no diphtheria culture as negative unless found so after forty-eight hours' incubation.

1933	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Cultures examined for diphtheria—													
1. After 12-24 hours. incubation	1,022	844	1,041	904	986	919	977	1,091	734	1,111	1,047	889	11,565
2. Negative after 12-24 hours' incubation and re-examined after 48 hours	441	788	963	831	929	832	910	985	693	941	863	726	9,902
3. Positive for diphtheria at second examination	17	27	29	24	33	34	28	32	13	47	28	22	334
4. Percentage of positives in second examination	3.85	3.43	3.01	2.88	3.55	4.1	3.07	3.25	1.88	5	3.24	3.03	3.37
Blood—Full counts	43	28	33	29	46	37	38	36	40	43	28	34	435
Leucocyte counts ...	34	41	49	31	31	51	35	49	52	55	70	44	542
Parasites, etc.	4	5	6	6	6	5	2	3	5	3	2	2	49
Cultures	6	7	8	9	13	8	9	9	12	8	8	5	102
Widals	3	6	7	5	4	2	...	6	2	6	9	10	60
Sugar	165	131	208	175	258	190	182	198	179	149	193	140	2,168
Typing for transfusion	21	4	4	25	72	8	...	2	13	8	6	9	104
Fluids—Cerebro-spinal	8	16	15	7	9	6	4	7	6	15	6	5	172
Body and joint	4	17	10	9	6	3	4	2	13	13	9	4	94
Faeces	7	2	8	8	2	10	1	7	5	2	...	2	54
Pus—For organisms, etc. ...	6	16	11	15	16	11	11	11	41	12	21	20	191
Smears—Gonococci	57	60	54	38	43	27	34	25	16	17	34	22	427
Leprosy .....	...	...	1	...	1	1	20	...	...	20	19	8	70
Vincent's Angina ...	7	10	9	4	4	6	11	5	5	4	4	5	74
Dark field examination for Sp. Pallidum	3	1	3	3	4	4	3	1	...	4	2	2	30
Hairs and Seales for fungi...	1	...	3	2	3	2	2	1	1	5	3	1	24
Sputum for T.B.	183	203	249	133	157	222	167	190	185	125	217	211	2,242
Urine—Organisms, pus, etc.	33	26	43	17	17	21	5	21	35	19	37	30	304
Deposits only	62	90	109	85	110	69	85	115	59	71	51	63	969
Chemical	40	...	5	2	5	4	1	2	2	15	1	1	78
Vaccines prepared	1	5	6	11	7	1	4	3	3	6	7	10	64
Swabbings for Haemolytic Streptococci	83	85	49	59	40	47	55	144	82	130	166	111	1,051
	2,234	2,385	2,894	2,408	2,769	2,486	2,560	2,913	2,183	2,782	2,803	2,354	30,771

The Principal Works carried out at the hospital during 1933 were as follows :—

Work performed by Public Works Department.

Renewal of roofing, guttering and downpipes, Wards, Nurses' Quarters and Female Staff Quarters.
Replacement of washing machines and repair of hydro-extractor; installation of steam boiler.
Renewal of electric light and power services in Wards and Staff Quarters.
Painting and renovating of buildings.
Replacement of steam sterilizers in Wards, and provision of hot water service at Medical Superintendent's Quarters.
Mechanical and electrical maintenance.
Provision of new X-ray block.
Provision of new dormitories and messroom for working patients.
Renovation of water service at Nurses' Quarters, etc., Coast Hospital Auxiliary, Randwick.

Work performed by the Hospital Staff.

Installing electrical power points in wards, etc.
Refitting and lining of Steam Disinfector.
Installation of hot water and steam services, Ward II.
Repair of steam mangle and installation of hydro-extractor at Laundry.
Repair and maintenance of electrical and steam services, etc.
Making and repairing splints and surgical appliances.
Glassing verandahs.
Repair and renovation of flooring, buildings, and furniture.
Construction of concrete drains.
Repair of brick retaining wall, etc.
Repair of galvanised iron roofing, etc.
Minor structural alteration of buildings.
Painting wards, staff quarters, etc., and duco spraying wooden and metal furniture.

Dairy.—The dairy was closed in November, 1933, and the cattle transferred to the Liverpool and Newington State Hospitals.

Vegetable Garden.—81,654 lb. of vegetables valued at £570 6s. 9d. were produced in the vegetable garden attached to the hospital.

W. MEGARVEY,
Manager.

H. V. D. BARET,
Medical Superintendent.

TABLE I.—General Statement of the working of the Hospital from 1st January to 31st December, 1933.

		No. of Beds, 1933.		
Number of beds available in the General Division on 31st December, 1933		456		
" " Infectious Division		273		
" " Nurses' Sick Room		4		
			733	
Coast Hospital Auxiliary, Randwick			120	
Total accommodation			853	

		Males.	Females.	Total.
Number of inmates remaining in hospital on 31st December, 1932...		436	344	780
" admitted during the year 1933		4,195	5,437	9,632
Total treated		4,631	5,781	10,412
Discharged—Cured		2,489	4,023	6,512
" Relieved		1,170	1,001	2,171
" Unrelieved		180	199	379
" No Disease		14	21	35
Died		390	296	686
Total number discharged, or who died		4,243	5,540	9,783
Remaining in hospital on 31st December, 1933		388	241	629

Average daily number resident	745
Average residence of discharged patients in days.....	26
Rate of mortality on total number who where discharged or who died	7.01
Total cost of maintenance and treatment of indoor patients	£98,291 11s. 6d.
Average cost of patients per annum	£130 11s. 10d.

	Males.	Females.	Total.	Total Visits.
Out-patients—				
Total number of individuals who received treatment	2,047	2,068	4,115	8,768
Total cost of Out-patient treatment .....	.....	.....	.....	£725

Hospital Staff on 31st December, 1933.

Medical and Administrative.	Number.	Nursing.	Number.	General.	Number.
Medical Superintendent	1	Sub-Matron	1	Gardeners	3
Deputy Medical Superintendent	1	Asst. Sub-Matron	1	Ambulance Driver	1
Assistant Medical Officers.....	10	Sisters—		Overseer	1
Manager	1	Senior	9	Artisans	12
Matron	1	Junior	7	Attendants, Outdoor	23
Dispensers	3	Nurses—		Telephone	
Clerks.....	10	Staff	25	Attendants.....	4
Laboratory Assistants.....	2	Pupil	225	Male Cooks	4
Storekeeper	1	Ward		Female Cooks	8
		Attendants ...	21	„ Servants ...	80
Total	30	Housekeeper ...	1	Laundresses	13
		Masseuse	2	Needlewomen.....	3
			292		154
				Total Staff ...	476

TABLE II.—Return showing the number of Wards, together with the cubic space and number of beds in each Ward, in the General and Infectious Divisions of the Coast Hospital for the year 1933.

Ward.	Cubic Space.	No. of Beds.	Cubic space per Bed in Ward.	Ward.	Cubic Space.	No. of Beds.	Cubic Space per Bed in Ward.
1 and 2.....	77,788	88	855	17	16,915	30	564
5 and gallery	31,368	25	1,254	18 and verandah	53,062	50	1,263
6	10,800	8	1,350	19 and verandah	53,062	50	1,263
7	10,800	8	1,350	20 and verandah	53,062	50	1,263
8 and gallery	32,268	24	1,344	21 and verandah	53,062	50	1,263
9	12,000	8	1,500	23 and verandah	53,062	50	1,263
10 and N. Sick Room ...	16,356	19	1,168	24	19,023	25	761
11	22,320	26	858	25	19,023	25	761
12	23,880	28	853	26	19,023	25	761
13	28,236	41	688	27	19,023	25	761
14	43,520	27	1,012				
15	28,296	30	943	Total	729,996	733	
16	11,520	21	886				

Coast Hospital Auxiliary, Randwick.

Ward	Cubic Space.	No. of Beds.	Cubic space per Bed.
23	23,415	24	975
24	23,415	24	975
26	23,415	24	975
28	23,415	24	975

These figures do not include 6 beds on the verandah of each ward.

TABLE IV.—Showing Number of Cases of Diphtheria, Scarlet Fever, and Typhoid Fever notified within the Metropolis, and the percentage of these cases treated at the Coast Hospital, in each of the years 1919-1933 inclusive. (These figures include cases outstanding at end of year.)

	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.	1930.	1931.	1932.	1933.
<i>Diphtheria.</i>															
Cases notified in Metro- polis	988	1,825	2,916	1,807	1,722	2,115	1,626	2,048	2,112	2,028	2,124	1,938	1,873	2,049	2,067
Cases treated at Coast Hospital	501	834	1,360	905	854	1,115	787	1,018	997	1,123	1,111	1,180	1,033	1,231	1,273
Percentage	50.72	45.6	46.6	50	49.5	52.7	48.4	49.7	47.2	53.8	52.3	60.8	55.1	60.07	62.07
<i>Scarlet Fever.</i>															
Cases notified in Metro- polis	424	468	511	653	1,541	2,241	1,916	3,424	5,840	3,729	3,418	2,980	3,180	3,032	2,690
Cases treated at Coast Hospital	174	167	174	229	622	1,045	842	1,668	2,183	1,723	1,572	1,516	1,526	1,740	1,607
Percentage	41.04	35.6	34	35	40.4	46.6	43.9	48.7	37.4	46.2	46.0	52.5	51.1	57.38	59.7
<i>Typhoid Fever.</i>															
Cases notified in Metro- polis	335	366	342	246	265	242	230	245	184	133	185	118	88	104	...
Cases treated at Coast Hospital	20	56	49	33	51	8	50	60	33	22	53	27	27	26	16
Percentage	5.97	15.3	14.3	13.4	19.2	23.9	21.7	24.4	18	16.6	28.6	22.9	22.9	25	35.2

TABLE V.—Duration of Stay in Hospital of cases of Typhoid Fever, Measles, Scarlet Fever, Whooping Cough, and Diphtheria.

Duration of Stay.	Typhoid Fever.			Measles.			Scarlet Fever.			Whooping Cough.			Diphtheria.		
	Cured.	Died.	Total.	Cured.	Died.	Total.	Cured.	Died.	Total.	Cured.	Died.	Total.	Cured.	Died.	Total.
1 week or less	...	1	1	24	9	33	36	12	48	...	...	...	19	17	36
1— 2 weeks..	...	1	1	154	3	157	24	3	27	...	...	...	212	6	218
2— 3 „ ...	2	...	2	38	1	39	30	4	34	1	...	1	639	1	640
3— 4 „ ...	...	...	...	15	...	15	355	...	355	...	...	...	174	...	174
4— 5 „ ...	...	...	...	6	1	7	639	2	641	...	...	...	45	1	46
5— 6 „ ...	...	...	...	...	...	...	138	...	138	...	...	...	17	3	20
6— 7 „ ..	1	...	1	5	...	5	...	...	...	...	...	...	12	...	12
7— 8 „ ...	...	...	...	2	...	2	79	2	81	...	...	...	9	...	9
8— 9 „ ...	1	...	1	2	...	2	44	2	46	...	...	...	7	...	7
9—10 „ ...	2	...	2	...	...	...	31	...	31	...	...	...	4	...	4
10—11 „ ...	1	...	1	...	...	...	25	...	25	...	...	...	5	...	5
11—12 „ ...	2	...	2	2	...	2	17	...	17	...	...	...	3	...	3
12—13 „ ...	...	...	...	...	...	...	9	...	9	...	...	...	5	...	5
13—14 „ ...	...	...	...	1	...	1	8	...	8	...	...	...	2	...	2
14—15 „ ...	...	...	...	...	...	...	5	...	5	...	...	...	1	...	1
15—16 „ ...	...	...	...	1	...	1	8	...	8	...	...	...	...	...	...
16—17 „ ...	...	...	...	...	...	...	2	1	3	...	...	...	...	...	...
17—18 „ ...	...	...	...	...	...	...	6	...	6	...	...	...	...	...	...
18—19 „ ...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...
19—20 „ ...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...
20—21 „ ...	...	...	...	...	...	...	1	1	2	...	...	...	...	...	...
21—22 „ ...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...
22—23 „ ...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...
23—24 „ ...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...
24—25 „ ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25—26 „ ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Over 26 „ ...	1	...	1	...	...	...	2	...	2	...	...	...	...	...	...
Total ...	10	2	12	250	14	264	1,464	27	1,491	1	...	1	1,154	28	1,182

Fortnightly Admission cases during 1933.

	Fortnight ending—																										Total
	Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.				
	14	28	11	25	10	24	7	21	5	19	2	16	30	14	28	11	25	8	22	6	20	3	17	1	15	31	
Typhoid Fever.	...	1	1	...	1	...	1	1	1	1	...	...	...	1	...	...	...	...	...	1	1	1	1	1	...	13	
Measles ...	5	12	1	3	4	3	4	3	6	8	14	5	6	18	12	7	10	14	20	13	24	20	18	12	15	10	267
Scarlet Fever.	75	57	66	58	55	37	51	40	48	55	52	43	54	64	57	44	62	62	64	50	70	63	48	40	35	30	1,380
Whooping Cough.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	2	
Diphtheria	36	49	47	49	46	71	52	74	65	40	64	31	36	43	44	41	35	31	26	31	44	53	55	54	42	53	1,212
Influenza ...	1	3	...	1	...	2	...	5	6	1	2	4	3	2	2	6	10	18	15	5	6	3	1	1	1	1	99
Other Di- seases.	250	252	299	242	318	288	272	258	236	261	230	255	220	233	249	229	250	246	231	260	245	221	262	270	322	260	6,659
Total ...	367	374	411	353	424	401	380	381	362	366	362	338	319	360	365	327	367	371	356	359	390	361	385	379	417	354	9,632

TABLE VII.—Return of the Number of Persons under Treatment, the Order of Disease for which they were treated, and the Number of Deaths in each Order during the year 1933. (Includes cases remaining in Hospital on 31st December, 1932.)

1931.	Discharged during the year.				Remaining in on 31st December 1933.	Total.	Average number of days in Hospital.
	Cured.	Relieved.	Un- relieved.	Died.			
CLASS 1.—GENERAL DISEASES.							
Typhoid Fever	9	...	1	2	4	16	67·5
Malaria	1	1	...	...	...	2	13·0
Measles	247	3	...	14	13	277	14·7
Scarlet Fever	1,455	9	...	27	116	1,607	36·3
Whooping-cough	1	...	...	...	1	2	20·0
Diphtheria	1,148	6	...	28	91	1,273	19·5
Influenza	91	2	...	6	...	99	13·6
Mumps.....	13	...	...	...	...	13	11·8
Dysentery .....	...	1	...	2	...	3	26·0
Erysipelas	82	3	...	3	3	91	17·6
Other Epidemic Diseases	13	...	...	1	...	24	12·2
Purulent Infection and Septicæmia	1	2	...	7	...	10	27·0
Anthrax	1	...	...	...	...	1	118·0
Tetanus	3	...	...	3	...	6	16·8
Mycoses .....	...	...	...	1	1	2	18·0
Lethargica .....	...	2	...	...	...	2	39·0
Tuberculosis of the Lungs	3	119	51	172	86	431	85·9
" Acute Miliary.....	1	...	...	...	...	1	12·0
" Meningitis .....	...	...	...	1	...	1	15·0
" Pott's Disease	1	3	1	4	7	16	380·5
" Hips.....	3	3	...	1	6	13	174·0
" Other	2	3	...	2	...	7	86·2
Poliomyelitis...	...	6	2	...	...	8	155·5
Syphilis .....	...	75	7	3	11	96	56·2
Soft Chancre	2	1	...	...	1	4	43·0
Gonorrhœal Disease	8	264	2	2	23	299	44·4
Cancer, &c., of the Mouth	7	10	3	2	1	23	20·0
" of the Stomach and Liver .....	...	13	20	19	3	55	33·5
" of the Peritonæum, Intestines, and Rectum	5	11	9	9	2	36	39·0
" of the Female Genital Organs .....	...	7	7	6	2	22	23·0
" of the Breast	2	8	2	...	1	13	52·0
" of the Skin	7	16	3	...	2	28	20·3
" of other Organs	4	11	12	20	1	48	33·0
Tumours	15	7	5	1	...	28	27·6
Acute Rheumatism.....	27	20	1	3	10	61	27·5
Chronic Rheumatism and Gout	1	42	2	...	4	49	65·7
Diabetes	9	175	4	25	8	221	33·8
Exophthalmic Goitre	6	14	1	5	1	27	32·5
Hodgkin's Disease .....	...	3	...	5	5	13	66·7
Anæmia, Chlorosis	3	15	2	7	2	29	35·7
Leprosy .....	...	...	...	...	...	...	...
Alcoholism, Acute and Chronic	4	8	...	...	1	13	9·5
Other Chronic Poisoning and Lead.....	...	4	1	...	1	6	16·4
Other General Diseases	3	3	...	...	1	7	10·6
Diseases of Spleen.....	...	...	...	...	...	...	...
Addison's Disease .....	...	...	...	...	...	...	...
Diseases of Pituitary Glands .....	...	...	...	...	...	...	...
Total, Class 1	3,128	870	126	381	408	4,983	...
CLASS 2.—DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSE.							
Meningitis .....	...	...	...	...	...	...	...
Cerebro-spinal Meningitis	3	1	...	2	...	6	12·3
Other Diseases of the Spinal Cord .....	...	5	3	...	...	8	30·1
Cerebral Hæmorrhage	3	7	3	20	2	35	25·0
General Paralysis of Insane.....	...	1	1	...	...	2	40·0
Other forms of Mental Alienation .....	...	1	6	1	...	8	14·2
Epilepsy .....	...	9	5	1	...	15	18·7
Chorea.....	3	3	1	...	1	8	48·5
Locomotor Ataxia.....	...	3	1	...	1	5	16·7
Neuralgia and Neuritis.....	12	23	...	1	3	39	18·0
Other Diseases of the Nervous System	7	40	10	...	3	60	15·7
Diseases of the Eye and Adnexa.....	7	3	2	...	3	15	10·8
Diseases of the Ear	63	27	2	4	6	102	28·7
Encephalitis .....	...	1	...	4	1	6	20·4
Cerebral Embolism and Thrombosis	1	13	1	3	1	19	26·0
Infantile Convulsions under 5.....	4	...	...	1	...	5	4·2
Total, Class 2	103	137	35	37	21	333	...
CLASS 3.—DISEASES OF THE CIRCULATORY SYSTEM.							
Angina Pectoris .....	...	3	...	...	...	3	27·3
Acute Endocarditis .....	...	5	...	6	...	11	58·0
Organic Diseases of the Heart	2	82	11	36	8	139	39·3
Diseases of the Arteries, Atheroma, &c. ....	...	8	...	1	...	9	14·0
Embolism and Thrombosis	2	3	...	...	...	5	39·0
Diseases of the Veins (Varices, Ulcer, and Hæmorrhoids)...	26	15	2	...	1	44	25·8
Diseases of the Lymphatic System	7	...	1	1	...	9	11·3
Hæmorrhage	2	1	...	...	...	3	10·6
Pericarditis.....	...	...	...	1	2	3	302·0
Aneurism.....	...	...	1	2	...	3	5·3
Arteriosclerosis	3	38	8	12	...	62	24·6
Other Diseases—Circulatory System.....	1	2	...	1	...	4	109·0
Total, Class 3	43	157	23	60	12	295	...

TABLE VII.—Return of the Number of Persons under Treatment, &c.—*continued*.

	Discharged during the year.				Remaining in on 31st December, 1933.	Total.	Average number of days in Hospital.
	Cured.	Relieved.	Un- relieved.	Died.			
CLASS 4.—DISEASES OF THE RESPIRATORY SYSTEM.							
Diseases of the Nasal Fossæ	38	33	4	...	...	75	15·7
Diseases of the Larynx .....	...	1	...	...	...	1	4·0
Capillary Bronchitis.....	2	...	...	...	...	2	13·5
Acute Bronchitis	28	4	1	2	1	36	15·7
Chronic Bronchitis	6	35	2	2	1	46	27·0
Broncho-Pneumonia	47	3	1	21	...	72	18·1
Pneumonia	142	12	1	38	5	198	22·8
Pleurisy	52	12	2	2	3	71	30·2
Asthma	1	39	2	1	3	46	24·1
Other Diseases of the Respiratory System	2	3	1	3	2	11	22·0
Congestion and Gangrene of Lung .....	...	...	...	1	...	1	27·0
Bronchitis, Unspecified .....	...	...	...	...	...	...	...
Total, Class 4	318	142	14	70	15	559	...
CLASS 5.—DISEASES OF THE DIGESTIVE SYSTEM.							
Gastritis	17	3	1	...	2	23	10·8
Diseases of the Teeth and Gums .....	...	...	...	...	...	...	...
Diseases of the Mouth and its Associated Organs	13	4	5	...	1	23	10·8
Diseases of the Pharynx	401	6	5	3	2	417	8·4
Ulcer of the Stomach	18	43	2	5	3	71	20·9
Other Diseases of the Stomach (Cancer excluded)	5	12	...	...	...	17	18·0
Diarrhœa and Enteritis (children under two years only)	14	...	1	1	...	16	13·0
Diarrhœa and Enteritis (children over two years and adults).....	35	7	2	2	1	47	11·6
Appendicitis	507	29	8	11	38	593	16·2
Hernia, Intestinal Obstruction	94	7	14	...	4	119	21·4
Other Diseases of the Intestines	11	5	1	9	...	26	20·4
Diseases of the Anus and Fæcal Fistulæ	45	46	15	2	4	112	18·0
Cirrhosis of the Liver	1	4	1	1	...	7	23·4
Biliary Calculi	49	29	1	5	2	77	29·0
Other Diseases of the Liver.....	40	35	4	5	9	93	22·2
Simple Peritonitis (non-puerperal)	3	7	2	...	4	16	22·0
Hydatid undefined	2	3	1	...	1	7	67·6
Other Diseases of Digestive System	2	3	1	1	...	7	20·2
Oesophagus, Stricture of.....	...	1	...	...	...	1	2·0
Uleer of Duodenum	18	63	...	3	5	89	27·5
Total, Class 5	1,275	298	64	48	76	1,761	...
CLASS 6.—DISEASES OF THE GENITO-URINARY SYSTEM AND ADNEXA (NON-VENEREAL).							
Acute Nephritis.....	15	7	1	4	1	28	37·4
Chronic Nephritis.....	4	19	3	31	...	57	17·4
Uterine Hæmorrhage	19	14	3	1	...	37	18·4
Other Diseases of the Kidneys and their Adnexa	44	44	5	5	6	104	22·5
Calculi of the Urinary Passages	20	28	8	1	1	58	24·5
Diseases of the Bladder	9	7	...	...	1	17	16·2
Other Diseases of the Urethra, Urinary Abscess, &c. ...	14	30	...	1	1	46	29·9
Diseases of the Prostate	12	26	2	4	5	49	33·7
Non-venereal Diseases of the Male Genital Organs.....	18	13	2	...	...	33	19·4
Salpingitis and Pelvic Abscess	97	45	5	2	4	153	24·5
Uterine Tumour (non-Cancerous)	37	5	6	2	5	55	25·4
Other Diseases of the Uterus .....	...	...	...	...	...	...	...
Cysts and other Ovarian Tumours.....	32	4	5	...	2	43	26·0
Other Diseases of the Female Genital Organs	74	42	23	1	4	144	18·2
Non-puerperal Diseases of the Breast (cancer excepted)...	6	1	...	...	...	7	15·4
Total, Class 6	401	285	63	52	30	831	...
CLASS 7.—PUERPERAL CONDITIONS.							
Abortion.....	646	10	2	2	12	672	10·6
Ectopic Gestation.....	28	1	1	...	...	30	25·6
Hyperemesis	9	5	2	1	2	19	13·2
Pyelitis .....	...	...	...	...	...	...	...
Hæmorrhage	12	9	1	...	...	22	8·4
Retroversion .....	...	...	...	...	...	...	...
Albuminuria .....	...	...	...	...	...	...	...
Pregnancy .....	...	...	...	...	...	...	...
Other Accidents of Labour.....	3	...	...	...	...	3	67·3
Puerperal Diseases of the Breast	4	1	...	...	...	5	20·4
Puerperal Septicæmia	12	5	...	12	3	32	21·2
Total, Class 7	714	31	6	15	17	783	...
CLASS 8.—DISEASES OF THE SKIN AND OF THE CELLULAR TISSUE.							
Gangrene	2	...	...	1	2	5	107·3
Phlegmon, Acute Abscess	104	20	2	6	8	140	22·2
Other Diseases of the Skin and Adnexa	76	57	4	3	6	146	29·7
Scabies .....	...	...	...	...	...	...	...
Furuncle	22	8	...	1	...	31	23·6
Elephantiasis.....	...	...	...	...	...	...	...
Total, Class 8	204	85	6	11	16	322	...

TABLE VII.—Return of the Number of Persons under Treatment, &c.—continued.

1931.	Discharged during the year.				Remaining in on 31st December, 1933.	Total.	Average number of days in Hospital.
	Cured.	Relieved.	Un- relieved.	Died.			
CLASS 9.—DISEASES OF THE ORGANS OF LOCOMOTION.							
Non-tuberculous Disease of the Bones	39	45	10	1	13	108	53·8
Arthritis and other Diseases of the Joints (Tuberculosis and Rheumatism excepted).....	9	17	1	1	5	33	60·5
Other Diseases of the Organs of Locomotion	14	14	1	...	1	30	31·4
Total, Class 9	62	76	12	2	19	171	...
CLASS 10.—MALFORMATIONS.							
Congenital Malformations	6	6	...	1	...	13	20·7
Total, Class 10	6	6	...	1	...	13	...
CLASS 11.—DISEASES OF EARLY INFANCY.							
Total, Class 11	1	1	...	1	...	3	1·5
CLASS 12.—OLD AGE.							
Senility .....	...	...	1	2	...	3	30·6
Total Class 12 .....	...	...	1	2	...	3	...
CLASS 13.—VIOLENCE.							
Lysol Poisoning.....	...	...	...	...	...	...	...
Scalds and Burns (other than fire).....	17	1	1	1	2	22	45·8
Poisoning by Food (not ptomaine)	10	...	...	...	...	10	5·9
Bite of Snake or Insect	2	4	...	...	...	6	4·6
Firearms Accidents	2	...	1	...	...	3	52·3
Cutting Instruments.....	16	3	...	1	1	21	19·4
Burning by Fire.....	2	...	...	...	...	2	63·5
Falls	54	20	7	3	8	92	22·9
Crushings	16	4	1	...	3	24	20·0
Railways and Tramways and Motor	27	10	1	...	...	38	31·5
Injuries by Vehicles and Horses.....	7	2	1	...	...	10	19·8
Shock	1	1	...	...	...	2	6·5
Other Injuries	3	3	...	...	...	6	33·3
Assault	1	1	...	...	...	2	25·5
Fractures (cause not obtainable)	1	...	...	...	...	1	26·0
Other Acute Poisonings (except gas).....	4	2	...	...	...	6	11·8
Total, Class 13	163	51	12	5	14	245	...
CLASS 14.—ILL-DEFINED DISEASES.							
Malnutrition .....	...	...	...	...	...	...	...
Debility	1	2	...	...	...	3	20·0
Marasmus .....	...	...	...	...	...	...	...
Observation	33	30	7	...	...	70	11·9
No disease* .....	...	...	...	1	...	6	24·0
Nurslings with mothers, no disease .....	...	...	...	...	1	31	13·3
Mothers with nurslings, no disease.....	...	...	...	...	...	...	...
Total, Class 14	34	32	7	1	1	110	...
SUMMARY.							
Total, Class 1.—General Diseases	3,188	870	136	381	408	4,983	...
„ 2.—Diseases of the Nervous System and of the Organs of Special Sense	103	137	35	37	21	333	...
„ 3.—Diseases of the Circulatory System	43	157	23	60	12	295	...
„ 4.—Diseases of the Respiratory System ...	318	142	14	70	15	559	...
„ 5.—Diseases of the Digestive Organs	1,275	298	64	48	76	1,761	...
„ 6.—Diseases of the Genito-Urinary System and Adnexa	401	285	63	52	30	831	...
„ 7.—Diseases of the Puerperal Condition ...	714	31	6	15	17	783	...
„ 8.—Diseases of the Skin and of the Cellular Tissue	204	85	6	11	16	322	...
„ 9.—Diseases of the Organs of Locomotion...	62	76	12	2	19	171	...
„ 10.—Malformation	6	6	...	1	...	13	...
„ 11.—Infancy	1	1	...	1	...	3	...
„ 12.—Old Age .....	...	...	1	2	...	3	...
„ 13.—Violence.....	163	51	12	5	14	245	...
„ 14.—Ill-defined Diseases	34	32	7	1	1	110*	...
Grand Total	6,512	2,171	379	686	629	10,412	...

* Includes 32 no disease.

TABLE VIII.—Operations performed during 1933.

NOTE.—“Recovered” means lived at least ten days after operation.

1933.	Recovered		Died.		Total.	1933.	Recovered.		Died.		Total.
	Male.	Female.	Male.	Female.			Male.	Female.			
1. Alimentary System.						5. Ocular and Arthritic System.					
Aesophagostomy	3	1	...	...	4	Amputation of finger	2	...	...	...	2
Appendicectomy	239	285	...	4	528	Amputation of leg	11	2	1	...	14
Cholecystectomy	7	40	...	1	48	Amputation of toe	2	...	...	...	2
Cholecystostomy	8	15	1	...	24	Arthrotomy	3	1	...	...	4
Choledochotomy	1	4	...	...	5	Osteotomy	7	4	...	...	11
Colostomy	5	5	...	1	11	Plating of fracture	3	...	...	...	3
Draining of hydatid	1	1	...	...	2	Reduction of fracture	23	11	...	...	34
Fistula in ano	5	...	...	...	5	Sequestrectomy	8	3	...	...	11
Fissure in ano	3	1	...	...	4	Tenotomy	1	3	...	...	4
Gastro-enterostomy	5	2	...	2	9	Mastoidectomy	25	48	...	1	74
Freeing peritoneal adhesions	2	14	...	...	16	Removal of bone plate	3	1	...	...	4
Hernia—						Removal of meniscus	1	...	...	...	1
Inguinal	77	8	1	...	86	Arthrodesis	1	...	...	...	1
Femoral	2	5	...	...	7	Operative repair of Dislocated shoulder	1	...	...	...	1
Incisional	2	4	...	...	6						
Umbilical	1	1	...	...	2		91	73	1	1	166
Laparotomy	16	18	5	2	41						
Oversewing pyloric ulcer	12	1	1	...	14						
Partial gastrectomy diverticulum	4	1	...	...	5						
Resection uckels	1	...	...	...	1						
Resection of bowel	3	2	...	...	5						
Enterostomy	1	2	...	...	3						
	398	410	8	10	826						
2. Genito-urinary System.						6. Respiratory System.					
Circumcision	33	...	...	...	33	Removal nasal polypi.....	5	4	...	...	9
Cystoscopy	30	48	1	...	79	Resection nasal septum	18	3	1	...	22
Cystostomy	7	...	...	...	7	Turbinectomy .....	...	2	...	...	2
Nephrostomy .....	...	1	...	...	1	Thoracotomy	20	7	1	...	28
Denervation of renal pedicle .....	...	1	...	...	1	Drainage maxillary antrum	36	31	...	...	67
Hydrocele	8	...	...	...	8	Drainage frontal sinus	3	8	...	...	11
Nephrectomy	5	5	...	...	10	Avulsion of phrenic nerve	1	1	...	...	2
Pyelolithotomy	1	...	...	...	1	Tracheotomy	3	5	...	...	8
Nephrolithotomy.....	3	2	...	...	5	Thoracoplasty	1	...	...	...	1
Orchidectomy	1	...	...	...	1		87	61	2	...	150
Prostatectomy	7	...	...	...	7						
Cure of varicocele	1	...	...	...	1						
Urethrotomy	1	...	...	...	1						
Dilatation of stricture	3	1	...	...	4						
Litholopaxy	1	...	...	...	1						
Amputation of penis	1	...	...	...	1						
	102	58	1	...	161						
3. Gynaecological System.						7. Circulatory System.					
Colpotomy .....	...	32	...	...	32	Arrest of haemorrhage	8	4	...	...	12
Internal shortening .....	...	20	...	...	20	Haemorrhoidectomy	18	11	...	...	29
Hysterectomy .....	...	8	...	...	8	Penarterial sympathectomy	1	...	...	...	1
Oophorectomy .....	...	10	...	...	10		27	15	...	...	42
Perineorrhaphy .....	...	18	...	...	18						
Salpingectomy .....	...	64	...	1	65						
Salpingo-oophorectomy .....	...	36	...	...	36						
Trachelorrhaphy .....	...	4	...	...	4						
Curettage uteri .....	...	661	...	...	661						
Myomectomy .....	...	5	...	...	5						
Manual removal of placenta .....	...	5	...	...	5		190	218	...	2	410
	...	863	...	1	864						
4. Cellular and Cutaneous System.						8. Lymphatic and Glandular System.					
Avulsion of Nail	6	14	...	...	20	Adenoidectomy	2	4	...	...	6
Excision of cyst	7	7	...	...	14	Excision of glands	4	3	...	...	7
Incision of abscess	123	101	1	3	228	Partial thyroidectomy .....	...	9	...	1	10
Suturing of wound	10	5	1	1	17	Tonsillectomy and adenoidectomy	184	202	...	1	387
	146	127	2	4	279						
9. New Growths.											
						Excision of breast .....	...	13	...	...	13
						Excision of cancer of bowel	2	3	...	1	6
						Excision of other tumours	7	14	...	...	21
						Excision of lipoma	2	6	...	...	8
						Excision of epithelioma	6	1	...	...	7
							17	37	...	1	55

TABLE VIII.—Operations performed during 1933—*continued*.
NOTE.—“Recovered ” means lived at least ten days after operation.

1933.	Recovered.		Died.		Total.	1933.	Recovered.		Died.		Total.
	Males.	Females.	Males.	Females.			Males.	Females.	Males.	Females.	
10. <i>Miscellaneous.</i>						<i>Summary of Operations.</i>					
Drainage brain abscess	3	1	...	...	4	Alimentary	398	410	8	10	826
Biopsy	2	6	...	...	8	Genito-urinary	102	58	1	...	161
Indectomy	3	2	...	...	5	Gynaecological.....	...	863	...	1	864
Cataract operation	3	3	...	...	6	Cellular and cutaneous	146	127	2	4	279
Insertion of radium	33	19	1	...	53	Osscous and arthritic	91	73	1	1	166
Lumbar puncture	33	15	1	...	49	Respiratory	87	61	2	...	150
Paracentesis tympani	98	132	...	...	230	Circulatory	27	15	...	...	42
Removal aural polypi.....	3	...	...	...	3	Lymphatic and glandular	190	218	...	1	410
Removal of foreign body	3	3	...	...	6	New growths	17	37	...	...	55
Teeth extraction	2	5	...	...	7	Miscellaneous	243	275	2	...	520
Plastic operations	5	4	...	...	9						
Enucleation of eye	1	1	...	...	2		1,301	2,137	16	19	3,473
Skin graft .....	...	1	...	...	1						
Examinations under anaesthetic	6	52	...	...	58						
Curettage of sinus	10	10	...	...	20						
Manipulation under anaesthetic	25	8	...	...	33						
Mastoid dressing	6	10	...	...	16						
Removal of ptynegium	1	...	...	...	1						
Diathermy	3	3	...	...	6						
Frecing of nerve	2	...	...	...	2						
Excision of lachrymal sac	1	...	...	...	1						
	243	275	2	...	520						

General Anaesthetics.

Kelene and ether, 2,689; ether, 171; chloroform, 11; chloroform and ether, 13; local, 158; gas and oxygen, 5; intra pharyngcal ether, 372; intra-tracheal ether, 87; kelene, 119; spinal, 31. Total, 3,656.

STATEMENT OF WORKING EXPENSES OF THE COAST HOSPITAL FOR THE YEARS 1932-33.

TABLE IX.—Maintenance and Treatment of Patients and Staff.

	1932.			Average.			1933.			Average.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
A. Salaries and Wages—												
1. Administrative	1,819	14	2				2,038	7	9			
2. Medical	3,769	16	8				3,362	3	8			
3. Clerical	2,359	10	0				2,108	15	11			
4. Dispensary	1,002	17	11				11,013	0	8			
5. Nursing	29,169	11	6				22,492	12	7			
9. Laundry	3,102	16	6				2,834	4	10			
10. Tradesmen and Mechanics	3,396	7	6				3,180	9	1			
11. Cleaning and General	11,740	9	7				10,185	12	0			
12. Farm and Garden	450	4	4				452	0	4			
13. X-ray .....	.....						312	11	2			
14. Workmen's Compensation Insurance Premium.....	596	12	11				.....				
	57,408	1	1	74	5	4	47,979	18	0	64	8	1
B. Provisions—												
1. Meat	2,815	15	10				2,435	7	3			
2. Milk	1,557	16	6				1,778	6	3			
3. Butter	1,505	9	8				1,611	3	2			
4. Bread and Flour.....	1,329	13	5				1,242	2	4			
5. Eggs	1,281	3	0				1,360	18	2			
6. Fish, fresh	400	1	6				380	11	5			
7. Poultry	1,136	12	1				1,247	19	4			
8. Groceries	4,067	14	10				3,560	3	10			
9. Vegetables and Fruit	1,349	5	9				1,355	0	7			
10. Malt Liquors	26	7	2				8	3	6			
11. Ice	104	15	7				101	8	9			
12. Cream	298	3	0				242	8	4			
	15,872	18	4	20	10	8	15,323	12	11	20	11	5
C. Drugs and Surgical Appliances—												
1. Drugs, &c.	7,042	4	8				8,889	13	10			
2. Dressings and Bandages	157	6	8				136	11	11			
3. Surgical Appliances, Renewals.....	571	9	9				516	7	4			
4. Surgical Instruments, Renewals	154	11	5				136	7	10			
5. Stimulants	482	5	4				461	3	2			
	8,407	17	10	10	17	6	10,140	4	1	13	12	3
D. Fuel, Light, and Power—												
1. Coal, Coke, and Fuel Oil	3,032	11	8				3,309	18	6			
2. Electricity	1,026	1	8				1,503	7	0			
3. Electrical Fittings, Renewals	160	2	4				553	4	8			
	4,218	15	8	5	9	0	5,366	10	2	7	5	2
E. Domestic—												
1. Bedding and Bed Linen	1,145	18	3				1,940	4	11			
2. Clothing	677	8	6				681	11	2			
3. Drapery	434	0	9				911	10	1			
4. Uniforms	25	0	5				85	4	1			
5. Renewals of Furniture	94	8	0				458	9	7			
6. Ironmongery and Cutlery, &c.	101	16	9				339	15	4			
7. Brushware, Earthenware, &c.	273	5	6				477	14	6			
8. Laundry Materials	165	3	0				165	10	5			
	2,917	1	2	3	15	6	5,060	0	1	6	16	1
F. Printing and Stationery—												
1. Printing and Stationery	438	12	9				363	1	0			
2. Postage	165	0	0				172	0	0			
	603	12	9	0	15	7	535	1	0	0	14	4
G. Maintenance of Buildings and Grounds—												
1. Ordinary Repairs and Alterations	866	3	8				1,069	7	5			
2. Roadways and Grounds	15	10	3				17	8	4			
	881	13	11	1	2	10	1,086	15	9	1	9	2
J. Miscellaneous—												
1. Rates and Taxes	298	17	6				283	6	0			
2. Insurance.....	.....						.....
3. Burials and Coffins.....	151	5	0				164	10	6			
4. Telephones	672	9	9				683	5	6			
5. Petty Expenses	531	16	10				408	14	10			
6. Unclassified	506	6	4				533	14	1			
	2,160	15	5	2	15	11	2,073	10	11	2	15	8
K. Extraordinary Expenditure—												
1. Surgical Instruments	58	11	11				10	12	0			
2. Appliances (Radium)	2	2	0				3,500	0	0			
3. Machinery .....	.....						.....
4. New Furniture .....	.....						.....
5. New Buildings and Additions .....	.....						.....
6. Miscellaneous	10	14	2				.....				
7. Drapery .....	.....						.....
8. Ironmongery .....	.....						.....
9. Brushware .....	.....						.....
10. Bedding and Bed Linen .....	.....						.....
11. Special Repairs .....	.....						.....
	71	8	1	0	1	10	3,510	12	0	4	14	3

TABLE XI.—SUMMARY TABLE, showing the work of the Coast Hospital and its cost each year, from 1889 to 1933.

Year.	No. of Patients admitted.	Average residence of discharged patients in days.	Rate of Mortality on cases treated.	Infectious Diseases included in foregoing columns.												Average daily number.	Cost per occupied bed.	Wines, spirits, etc., cost per head (included in foregoing columns).										
				Typhoid Fever.		Measles.		Scarlet Fever.		Whooping Cough.		Diphtheria.		Influenza.					Plague.		Erysipelas.		Other Epidemic Diseases.					
				Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.				Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.				
1889	1,813	39.09	5.44	342	24	10	1	21	...	36	2	7	2	...	...	...	...	52	2	...	...	198.09	44	17	4½	0	6	4½
1890	1,529	42.00	7.03	140	21	5	...	14	...	19	...	1	...	...	...	...	...	19	7	...	...	178.00	55	7	5	0	5	11
1891	1,748	40.00	3.23	88	8	1	...	22	...	25	...	4	...	...	...	...	...	31	7	...	...	193.00	50	2	6	0	5	2½
1892	1,644	44.06	4.04	61	10	2	...	39	...	29	2	6	2	...	...	...	...	24	16	...	...	200.03	44	17	11½	0	7	6½
1893	2,274	32.08	4.05	83	10	281	8	195	12	7	...	9	...	...	...	...	...	36	7	...	...	193.05	47	8	0	0	10	1
1894	2,158	27.06	4.03	143	12	7	1	118	9	28	3	9	...	...	...	...	...	36	26	...	...	176.04	55	7	4½	1	3	6½
1895	2,451	24.06	3.07	96	6	...	...	60	...	25	1	45	1	...	...	...	...	51	10	...	...	176.03	59	1	11	1	1	6½
1896	2,213	31.03	5.04	236	19	2	...	61	...	3	...	11	...	...	...	...	...	63	1	...	...	204.06	51	6	1½	1	4	4
1897	2,307	32.06	5.05	128	11	...	...	235	7	...	...	25	...	...	...	...	...	100	6	...	...	224.04	50	19	2	1	9	10
1898	2,604	31.04	5.38	163	18	319	15	350	...	...	...	27	...	...	...	...	...	70	...	...	...	231.00	64	14	10	1	14	3½
1899	2,359	36.30	4.79	148	13	10	...	134	2	42	2	25	2	...	...	...	...	54	...	...	...	224.25	73	10	11½	1	13	10
1900	2,513	30.10	5.20	247	25	29	...	116	2	2	...	7	...	...	...	...	...	33	8	...	...	214.40	72	18	8½	1	8	2½
1901	2,688	31.24	5.75	214	21	131	1	150	5	15	...	65	...	...	...	...	...	49	11	...	...	255.50	59	4	3½	0	16	1½
1902	2,672	30.94	6.29	144	5	73	...	313	20	26	...	64	...	...	...	...	...	109	6	...	...	256.85	66	9	4½	0	13	10½
1903	3,359	31.72	4.67	166	20	62	1	585	21	13	...	92	...	...	...	...	...	84	16	...	...	300.76	61	17	11½	0	5	2½
1904	3,439	30.94	5.17	178	24	81	1	371	11	40	3	301	11	...	...	...	...	113	44	...	...	305.16	63	2	11½	0	7	8½
1905	3,298	31.81	5.20	139	20	43	1	284	6	1	...	313	10	...	...	...	...	100	7	...	...	289.32	59	12	0	0	8	4
1906	2,965	37.63	3.56	84	7	55	...	503	11	...	...	267	9	...	...	...	...	80	3	...	...	308.67	56	13	1½	0	4	0½
1907	3,051	37.16	5.93	101	12	157	5	336	5	93	20	389	23	...	...	...	...	58	...	...	...	307.41	58	17	8½	0	4	5½
1908	3,147	32.89	5.44	114	13	17	1	420	10	6	...	360	11	...	...	...	...	62	...	...	...	306.83	61	11	5	0	4	0½
1909	2,971	31.13	5.53	96	8	55	...	339	6	4	...	500	12	...	...	...	...	72	...	...	...	295.33	63	5	4½	0	4	1½
1910	3,538	30.52	5.39	85	7	189	12	150	6	74	...	909	18	...	...	...	...	40	41	...	...	312.66	62	2	0	0	2	5½
1911	3,474	29.19	5.32	66	8	70	...	134	...	67	...	974	24	...	...	...	...	48	...	...	...	322.62	64	0	1½	0	4	0½
1912	4,170	29.54	5.76	67	8	475	46	108	...	29	4	1284	36	...	...	...	...	73	5	...	...	335.45	77	15	1½	0	4	1½
1913	3,702	31.83	5.13	77	10	93	...	287	7	64	14	994	28	...	...	...	...	48	22	...	...	335.51	87	6	6½	0	3	3½
1914	4,032	32.35	3.81	73	12	82	1	628	7	36	4	977	10	...	...	...	...	34	20	...	...	373.11	74	7	5	0	1	0½
1915	4,806	30.09	4.12	123	10	357	2	1279	19	4	...	925	35	...	...	...	...	42	12	...	...	440.00	69	5	7	0	2	3½
1916	4,618	32.29	3.07	59	8	206	1	835	22	53	32	1101	32	...	...	...	...	55	244	...	...	447.00	77	4	11	0	4	1½
1917	4,320	36.49	3.73	16	2	147	6	498	4	21	11	1328	11	...	...	...	...	79	207	...	...	433.12	94	10	9	0	4	4
1918	4,556	39.60	4.20	31	6	323	13	314	9	63	13	1251	13	...	...	...	...	92	38	...	...	513.41	98	12	2	0	4	8
1919	5,556	20.67	8.13	25	1	62	3	213	5	20	...	571	10	...	...	...	...	66	20	...	...	385.2	159	0	4	0	8	3
1920	5,945	20.72	7.37	61	5	581	62	174	1	130	14	1360	15	...	...	...	...	86	44	...	...	477.62	159	0	0	0	5	7
1921	6,450	29.3	5.6	49	12	163	5	229	...	37	...	1360	15	...	...	...	...	102	52	...	...	522.3	156	17	8	0	7	7
1922	6,894	27.54	5.6	33	15	642	35	607	3	32	...	855	13	...	...	...	...	109	514	...	...	520.16	149	12	4	0	5	8
1923	8,289	34.38	6.37	48	5	85	...	1024	9	39	...	1107	16	...	...	...	...	195	258	...	...	563.47	141	10	2	0	13	2
1924	8,171	24.35	5.31	51	4	252	11	842	12	89	...	787	3	...	...	...	...	111	79	...	...	575.29	153	1	1	0	13	0
1925	8,458	23.61	6.41	50	4	701	35	1668	38	46	...	1018	13	...	...	...	...	98	43	...	...	578.06	143	9	2	0	11	3
1926	10,175	23.74	5.9	60	4	566	...	2183	53	34	...	1997	15	...	...	...	...	76	62	...	...	608.09	140	18	7	0	9	10
1927	10,163	27.8	5.6	33	4	510	62	1714	44	5	...	1149	18	...	...	...	...	109	59	...	...	709.96	151	10	1	0	9	1
1928	10,102	24.5	6.5	15	2	199	18	1572	32	79	...	1111	29	...	...	...	...	130	23	...	...	737.4	154	0	0	0	7	8
1929	10,454	24.1	6.8	53	3	566	58	1516	26	30	...	1180	15	...	...	...	...	119	100	...	...	740.00	172	11	10	0	5	3½
1930	11,001	25.2	6.9	27	3	93	...	1636	30	62	...	1633	11	...	...	...	...	132	55	...	...	758.00	162	6	10½	0	9	4½
1931	11,069	23.8	6.7	25	2	86	9	1560	12	62	...	1177	20	...	...	...	...	127	35	...	...	773.00	154	8	6½	0	9	4
1932	10,467	26.9	6.9	23	1	267	3	1560	17	1	...	1212	28	...	...	...	...	114	51	...	...	773.00	138	4	5	0	13	2
1933	9,632	26.0	7.01	13	2	...	14	1380	27	2	...	1212	28	...	...	...	...	85	24	...	...	745.00	130	11	10	0	12	7

2.—LEPER LAZARET.

REPORT ON LEPROSY IN NEW SOUTH WALES FOR THE YEAR ENDED
31st DECEMBER, 1933.

The Medical Superintendent of the Coast Hospital to the Director-General of Public Health.

The Coast Hospital, Sydney, N S.W.

Sir,

On 1st January, 1933, 19 persons remained under detention at the Lazaret. (*See Appendix A.*)

During 1933 one person was reported to the Board under the Public Health Act, 1902, Part III, as being a suspected leper, and after careful inquiry was duly certified as suffering from leprosy, and admitted to the Lazaret by warrant of the Board; and one person was readmitted.

One death occurred during 1933, viz.:—P.T.I., Case 176. One case was discharged, viz.:—C.B., Case No. 162.

The total number of persons admitted since 1883, when patients first began to be received (though the notification of leprosy was first made compulsory and the detention of lepers provided for by law only towards the end of 1890), is 188.* Distributed under nationalities, the account stands as follows at 31st December, 1933:—

	Admitted.	Readmitted.	Discharged.	Repatriated.	Died	Remaining in at 31 Dec., 1933.
Whites, of European descent—						
New South Wales	51	3	15	.....	29	10
Victoria	2	.. ..	.....	.....	2	.....
Queensland	4	.....	2	.....	2	0
Northern Territory	1	1	1	.....	.....	.....
Western Australia	1	.....	.....	.....	.....	1
New Zealand	1	.....	.....	.....	1	.....
Fiji	2	.....	1	.....	1	.....
England	13	.....	3	.. ..	9	1
Ireland	8	.. ..	2	.....	6	.....
Scotland	1	.....	1	.....	.. .	.....
Germany	4	.....	1 absconded.	1	2	.....
Belgium	1	.....	.....	.....	1	.....
U.S. America	1	.....	.....	.....	1	.....
Greece	2	.....	.....	1	1	.. ..
Malta	2	.....	1 absconded.	.....	1	.....
Sweden ..	1	.....	.....	.....	1	.....
France.....	1	.....	.....	.....	1	.....
Mauritius	1	.. ..	1	.. ..	.....	.....
Italy.....	1	.. ..	.. ..	1	.. ..	.. ..
Coloured patients—						
New South Wales	3	.. ..	1	.....	.....	2
West Indies	1	.....	1 (in 1885).	.....	.....	.....
India	4	.. ..	1 absconded.	1	2	.....
China	58	.. ..	2	33	19	4
Java	1	.....	.....	.....	1	.....
New Caledonia	1	.....	.....	.. ..	1	.....
Pacific Islands	18	.....	.. ..	5	11	1
Egypt	1	.....	.....	1	.....	.....
Zanzibar	1	.....	1 (Hong Kong at own request).	.....	.....	.....
Syria	2	.....	1	1	.....	.....
	188	4	35	44	92	19

* This is the number of persons admitted; it does not agree with the highest number given in Appendix B in numeral which indicates the number of cases observed, whether admitted or merely described and recorded.

Thus the number remaining in the lazaret on 31st December, 1933, was 19 persons; 16 males and 3 females.

Appendix A shows particulars of each case under detention since the year 1912.*

Every opportunity has been offered to members of the medical profession to visit the lazaret for the purpose of seeing such patients as were formerly under their care, or for study of the disease.

The following statements show the expenditure for the year, and the sources from which it has been defrayed:—

STATEMENT showing the Working Expenses of the Lazarets (for men and for women) at Little Bay for the year 1933.

							1933.		
							£	s.	d.
Salaries ...	...	...	...	...	...	...	1,430	16	6
Provisions ...	...	...	...	...	...	...	700	3	4
Fruit and vegetables ...	...	...	...	...	...	...	62	5	4
Uniforms, clothing, &c. ...	...	...	...	...	...	...	86	11	3
Printing, stationery and postage ...	...	...	...	...	...	...	3	0	0
Fuel and light ...	...	...	...	...	...	...	112	7	5
Wines, ales, &c. ...	...	...	...	...	...	...	67	9	2
Ironmongery, brushware, &c. ...	...	...	...	...	...	...	16	4	3
Drugs, dressings, &c. ...	...	...	...	...	...	...	132	5	0
Sundries ...	...	...	...	...	...	...	188	11	10
							£2,799 14 1		

Average number of patients resident, 19·5, being equal to an average of £143 11s. 6d. per inmate per annum in 1933.

STATEMENT showing the total Expenditure of the Lazarets (for men and for women) at Little Bay during the year 1933, and from what sources the amounts were paid.

EXPENDITURE.	1933.			HOW PAID.	1933.		
	£	s.	d.		£	s.	d.
To working expenditure, as per statement.	2,799	14	1	From vote—Maintenance of lepers by Department of Public Health	2,206	8	4
				Transfers from Coast Hospital stock	593	5	9
Total	£ 2,799	14	1	Total	£ 2,799	14	1

The needs of the patients have been carefully supplied by experienced attendants and nurses, under direct supervision of the Medical Superintendent and the Matron of the Coast Hospital, and, as in the past, every means have been adopted to alleviate their sufferings and to mitigate the hardships of their detention.

I have, &c.,

H. V. D. BARET,

Medical Superintendent.

* For particulars of cases under detention from 1883 see Annual Reports 1913–1930.

APPENDIX A.

RETURN showing Particulars of Lepers admitted to Little Bay, New South Wales, since the year 1912.

Name.	Sex.	Native of—	Occupation.	Admission.		Where from.	No. of Case in Clinical Notes.	Died or Discharged.
				Age on.	Date of.			
S.C.	Male...	China.....	Cabinet-maker...	40	21 May, 1912	Boolaroo, N.S.W.	128	
L.J.T.	" ..	N.S.W.	School	12	14 Aug., "	Lismore.....	129	Discharged, 21 July, 1916.
S.M.	" ..	Mallicolo	Labourer	50	27 " "	Macleay	130	Died, 23 April, 1919.
J.F.	" ..	N.S.W.	Van-driver	28	19 Sept., "	Glebe	131	Discharged, 1 Jan., 1920 re-admitted, 7 Nov., 1927; died, 18 Mar., 1930.
W.D.....	" ..	"	Fisherman	22	24 June, 1913	Ulladulla, South Coast...	132	Discharged, 10 Feb., 1921.
J.M.	" ..	New Hebrides ..	Labourer	60	28 Nov., "	Tweed River	133	Died, 17 Mar., 1917.
J.C.M.	" ..	N.S.W.	Miner.....	26	28 Jan., 1914	Homeville, W. Maitland	134	Died, 17 June, 1915.
W.B.	" ..	England	Dealer	33	4 Mar., "	Sydney	135	Died, 14 Aug., 1915.
A.C.P.	" ..	N.S.W.	School	15	23 June, "	Lismore.....	136	Discharged, 12 Oct., 1922; re-admitted, 16 Jan., 1925.
E.W.	" ..	South Sea Is....	Labourer	50	17 Nov., "	Cudgen	137	Discharged, 19 Oct., 1932.
H.H.	" ..	England	"	36	19 May, 1915	Hornsby	138	Died, 7 Jan., 1924.
A.D.	Female	New Hebrides ..	Domestic	19	1 Sept., "	St. Kilda, Victoria	139	Died, 18 July, 1923.
C.F.	Male...	China.....	Cabinet-maker...	50	18 Dec., "	Waterloo, N.S.W.	140	Discharged, 10 Mar., 1917.
L.F.	" ..	England	Showman	45	9 Mar., 1916	Campbelltown	141	Discharged, 2 June, 1917.
F.H.	" ..	China.....	Gardener	45	25 May, "	Sydney	142	Died, 15 June, 1916.
D.M.	" ..	N.S.W.	Publican	46	25 " "	Armidale	143	Discharged, 19 May, 1917.
W.J.P.	" ..	"	School	12	25 Nov., "	Lismore.....	144	Discharged, 5 Nov., 1924; re-admitted, 1 July, 1927.
E.L.P.	" ..	"	"	11	25 " "	"	145	Died, 27 Dec., 1922.
E.M.	" ..	Germany	"	56	3 April, 1917	Liverpool, N.S.W. ...	146	Repatriated as Prisoner of War, 27 May, 1919.
C.W.	" ..	England	"	80	14 " "	Sydney	147	Died, 18 Feb., 1923.
C.D.	Female	N.S.W.	Domestic	54	30 Oct., "	Casino, N.S.W.	148	Discharged, 12 June, 1920.
P.P.	Male...	Greece	Cafe-proprietor ..	33	21 Feb., 1918	Melbourne, Victoria ...	149	Died, 24 Feb., 1931.
J.C.	" ..	Ireland	Miner.....	84	5 Feb., 1919	"	150	Died, 19 Nov., 1920.
M.T.	Female	Victoria.....	Housewife.....	63	25 " "	Sydney	150A	Died, 1 May, 1919.
J.P.	Male...	Malta.....	Labourer	29	18 June, "	"	151	Abandoned, 14 Sept., 1919.
J.S.	" ..	"	"	30	22 Dec., "	Kempsey	152	Died, 29 July, 1921.
A.S.	" ..	China.....	Gardener	64	3 Aug., 1920	Kandos, N.S.W.	153	Died, 2 Aug., 1923.
C.T.P.	" ..	"	Labourer	30	19 Oct., "	Nauru Is., S. Pacific...	154	Discharged, 25 April, 1921;
E.T.D.	" ..	N.S.W.	Teamster	32	10 Nov., "	Bellingen, N.S.W. ...	155	Discharged, 1 Dec., 1925. re-admitted, 28 Sept., 1931.
C.F.	" ..	Ireland	Civil servant ...	57	20 Dec., "	Hobart, Tasmania	156	Discharged, 18 June, 1921.
A.W.	Female	Sweden	Seamstress	62	18 Feb., 1921	Newcastle	157	Died, 24 Feb., 1930.
D.A.	Male...	N.S.W.	Teamster	71	26 May, "	Newcastle	90	Died, 16 July, 1921.
J.C.	" ..	N.S.W.	Fisherman	22	18 Aug., "	Tilba Tilba	158	
A.S.	Female	Queensland	Domestic	20	29 Jan., 1922	Redfern	159	Returned to Peel Island, Queensland, 20 Mar., 1922.
M.B. ...	Male...	France	Labourer	67	7 June, 1922	Hunter's Hill	160	Died, 12 Aug., 1922.
E.	" ..	Ceylon	Sailor.....	24	13 Dec., "	Not fixed	161	Repatriated, 26 June, 1923.
E.B.	" ..	N.S.W.	Coach-painter ...	42	18 June, 1923	Taree, N.S.W.	95	Died, 5 Aug., 1923.
E.B.	" ..	Northern Terr....	Garage proprietor	35	11 Aug., 1924	Darwin, N.T.	162	Discharged, 16 Sept., 1925. Re-admitted, 7 July, 1933. Discharged 12 Dec., 1933.
L.S.	" ..	N.S.W.	Invalid pensioner	37	26 Oct., "	Liverpool Asylum	163	
B.	" ..	Ireland	Bush worker ...	61	28 Jan., 1925	Liverpool	164	Died, 24 June, 1931.
C.	" ..	Germany	Importer	45	6 Mar., "	Sydney	165	Abandoned, 21 Aug., 1925.
K.	" ..	Hawaii	Musician	"	7 " "	"	166	Repatriated, 11 Mar., 1925.
M.	" ..	China.....	School	12	12 " "	"	167	Repatriated, 16 Dec., 1925.
D.	" ..	N.S.W.	"	7	21 April, "	"	168	Discharged, 1 Dec., 1925.
Vong Toe...	" ..	China.....	Gardener	46	22 Nov., "	Clarence River	169	
P.	" ..	N.S.W.	Farmer	39	14 Dec., "	Queensland	170	Discharged, 9 Sept., 1926.
T.	" ..	Scotland	Chemist.....	56	8 May, 1926	Sydney .....	.....	Discharged, 21 July, 1926.
S.G.	Female	Queensland	Domestic	33	27 April, 1927	Hunter's Hill	171	Died, 29 Jan., 1930.
R.B.	Male...	N.S.W.	Farm labourer ...	41	6 July, "	Croydon	172	Died, 26 Nov., 1928.
V.C.	" ..	Mauritius	Sugar-worker ...	47	7 Feb., 1928	Queensland	173	Discharged, 4 July, 1928.
E.O.	Female	Queensland	Domestic	31	29 Mar., "	Northern Territory ...	174	Discharged, 15 Feb., 1932.
h Hoey ...	Male...	China.....	Gardener	49	28 May, "	Liverpool	175	
T.I.	" ..	N.S.W.	Labourer	17	9 Dec., "	Tweed River	176	Died, 15 Dec., 1933.
L.	" ..	"	"	47	22 " "	Macksville	177	
M.	Female	"	Domestic	59	14 Sept., 1929	Lismore.....	178	
W.	" ..	"	"	33	4 Feb., 1930	Sydney	179	Died, 6 Feb., 1930.
G.J.D. ...	Male...	"	School	13	4 July, "	Lismore.....	180	
C.	" ..	W. Australia	"	12	6 Aug., "	Sydney	181	
B.	" ..	Italy	Labourer	39	13 Sept., "	Queensland	182	Repatriated to Queensland, 15 Jan., 1931.
M.	Female	N.S.W.	Home-duties ...	19	1 April, 1931	Adamstown, N.S.W. ...	183	
L.	Male...	China.....	Gardener	60	12 Sept., 1931	Kogarah, N.S.W.	184	
T.	Male...	England	Bootmaker	60	29 Jan., 1932	Queensland	185	
D.	" ..	N.S.W.	Engine-driver ...	53	30 Sept., 1933	Lakemba, N.S.W.	186	

NOTES.—(a) The cases of a few other persons who, for one reason or other, were never admitted to the lazaret, have been mentioned in the course of the series of Reports, and are additional to those shown in this Table. (b) On comparison with the reports for early years, differences in ages or dates of admission of some coloured patients will be observed. Those now given are the correct ages and dates. Patients remaining under treatment have their initials shown in black-faced type.

APPENDIX A--continued.

RETURN showing admissions, discharges, &c , of Patients suffering from leprosy for the years 1918-1933.

	1918.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.	1930.	1931.	1932.	1933.
In Lazaret on 1st January	24	24	24	24	22	21	16	15	17	15	17	20	20	20	20	19
Admitted during the year	1	4	4	3	3	1	2	8	1	4	5	1	4	3	1	2
Died during the year .....	...	2	1	2	2	5	2	...	1	2	1	1	4	2	...	1
Discharged	1	2	3	1	2	...	1	4	2	...	1	...	...	...	2	1
Repatriated .....	...	...	...	2	...	1	...	2	...	...	...	...	...	1	...	...
Remaining in Lazaret on 31st December	<div><div>Total .....</div><div>Males .....</div><div>Females.....</div></div>															
	24	24	24	22	21	16	15	17	15	17	20	20	20	20	19	19
	19	19	20	17	16	12	11	13	11	14	16	15	17	16	16	16
	5	5	4	5	5	4	4	4	4	3	4	5	3	4	3	3

Birthplaces of Lepers.—The inmates of the Lazaret at the close of the year 1933 were of the following nationalities :—New South Wales, 10; West Australia, 1; Australian Aborigines, 2; Pacific Islands, 1; China, 4; England, 1. Total, 19.
Working Expenses of Lazaret.—During the year 1933, the total cost of the management of this Institution was £2,799 14s. 1d. Calculated on the average number of inmates, the average cost per inmate per annum was £143 11s. 6d.

APPENDIX B.

The Sections I-IV: Description of New Cases, Discharges, Deaths and Progress Report on Patients in the Lazaret will be included in the Report for 1934.

3.—DAVID BERRY HOSPITAL.

Berry, New South Wales.

REPORT of the Secretary for the year ended 31st December, 1933.

Administrative Staff.—Visiting Medical Officer, Dr. H. M. Hollingworth; Matron, Miss D. G. Cawood; Secretary, A. F. Hale.

Resident Staff.—Matron, 2 Registered Nurses, 5 Pupil Nurses, and 2 Attendants.

Number of Wards and Beds.—Wards, 6; beds, 22; cots, 2.

General Cases.—Beds, 20. *Infectious Cases.*—Beds, 2; cots, 2.

Sir,

I have the honour to submit herewith the annual report of this hospital for the year 1933 :—

Admissions and Discharges.—Remaining in on 1st January, 20; admitted during the year, 359; births, 6; discharges, 349; deaths, 16; remaining in on 31st December, 1933, 20.

In-patients.—The total number of in-patients treated in 1933 was 385, as against 406 for 1932. Daily average, 22, as against 21 for 1932.

Out-patients.—The number of out-patients attended to was 181, as against 253 for 1932.

Infectious Cases.—1 case of scarlet fever was admitted during the year.

Anaesthetics.—The total number of operations performed was 158 (major, 88; minor, 70); 56 visits were made by the Nowra doctors in connection with these operations: Dr. Ryan, 19; Dr. Rodway, 18; Dr. Thompson, 19.

Collections.—The collections for the year totalled £368 15s. 10d., compared with £339 13s. 8d. for 1932.

Buildings and Grounds.—These are in fair order.

A. F. HALE,
Secretary.

4.—LADY EDELINE HOSPITAL FOR BABIES, GREYCLIFFE, VAUCLUSE.

Annual Report for year ended 31st December, 1933.

Visiting Medical Officer.—Dr. L. R. Parker.

Honorary Staff of Consultants.—Dr. R. N. Paul, Consulting Dermatologist; Dr. R. S. Godsell, Consulting Ear, Nose and Throat Surgeon.

Resident Staff.—Matron, Miss H. J. Turner; 2 Staff Nurses and 6 Pupil Nurses.

Number of Wards.—General, 6; (48 cots, 4 beds). Isolation, 1 (1 cot, 1 bed). Total, 49 cots, 5 beds.

Return of Admissions and Discharges for 1933.—Remaining in hospital on 31st December, 1932, 25 babies and 11 mothers; admitted during 1933, 140 babies and 50 mothers; discharged 134 babies and 39 mothers; died, 7 babies. Total number treated, 165 babies. Remaining in hospital, 31st December, 1933, 24 babies and 11 mothers. Daily average of cots occupied, 23. Out-patients treated, 43. Average daily number of beds occupied by mothers, 11. Annual cost of maintenance and treatment, £1,890 2s. 2d. Average cost per occupied bed, £82 3s. 5d.

VISITING MEDICAL OFFICER'S REPORT.

There were 165 cases treated in Greycliffe this year, comprising mainly gastro-enteritic, nutritional and pneumonic conditions. Out of these there were only seven deaths, the majority of which were due to pneumonia, which was of a more severe type this year than has been the case for some time. The percentage of deaths was exceedingly low considering the type of case admitted, although not quite so low as the preceding year.

The hospital would like to record its extraordinary sense of loss in the passing of Sir Charles Clubbe. The constant attendance at Greycliffe of this distinguished man, and his continued and active interest at a time when he was relinquishing so many other activities was a source of intense pride to the hospital, while his incomparable knowledge and experience were of inestimable value when the problems were more than ordinarily responsible and anxious.

L. R. PARKER, V.M.O.

MATRON'S REPORT.

The following table shows the ages on admission of babies treated during 1933, the number of deaths and duration of stay in hospital of all fatal cases:—

	3 months.	3-6 months.	6-9 months.	9-12 months and over.	Total.
Ages on admission	53	39	37	36	165
Died	1	1	1	4	7
Duration of stay in hospital of all fatal cases	18 days ...1	18 days ...1 2mths ...1	5 days ...1	12 hours 1 25 days ...1 10 „ ...1	.....
	1	2	1	3	7

Nature of Cases Treated, 1933.—Gastro-enteritis, 71 cases (2 deaths); malnutrition, 34 (1 death); acute enteritis and pneumonia, 21 cases (1 death); broncho-pneumonia and colitis, 12 cases (2 deaths); lobar pneumonia, 8; bronchitis, 10; convulsions, 3 cases (1 death); pink disease, 1; influenza, 4; pyloric stenosis, 1. Total cases treated, 165.

Milk Supply.—In connection with the extension of the Carrara Convalescent Hospital, it was found necessary to dispense with the dairy herd hitherto kept in the grounds attached to that hospital. Arrangements were therefore made with one of the milk companies for a special supply of bottled milk for use at the Lady Edeline Hospital, and this has been found satisfactory.

Christmas Cheer.—The Sun Toy Fund, as usual, supplied the hospital with useful toys and presents at Christmas. This kindness is much appreciated by the little patients, who are kept interested and happy by the gifts.

H. TURNER,
Matron.

5.—STRICKLAND CONVALESCENT HOSPITAL FOR MEN AND WOMEN, CARRARA, ROSE BAY.

Report of the Matron for the year ended 31st December, 1933.

Visiting Medical Officer.—Dr. L. R. Parker.

The resident staff at 31st December, 1933, consisted of: The Matron (Miss V. K. Angus); 3 trained and 2 pupil nurses; other female staff, 6; attendants (male), 2.

Extension of Accommodation for Convalescent Patients.—Since 1914 the Department has maintained Denistone House, Convalescent Hospital for Men, Eastwood (28 beds), and Strickland Convalescent Hospital for Women, “Carrara,” Rose Bay (40 beds).

This accommodation was found insufficient for convalescent requirements, and, in consequence, it was frequently necessary to retain in the metropolitan hospitals patients who, although fit for discharge to a convalescent hospital, were not sufficiently recovered for discharge from trained supervision. Delay in discharge of such patients from a general hospital retards the admission of persons acutely ill and in urgent need of medical or surgical attention. Moreover, convalescent patients can be more comfortably and economically cared for in a suitably situated convalescent hospital than in a general hospital. It was, therefore, decided to provide further convalescent accommodation, and arrangements were made for considerable extensions to “Carrara,” which stands in 15 acres of land of much natural beauty on the northern side of Rose Bay.

During 1933, two wards, each of 40 beds, were constructed, and the main building (Carrara House), in which 40 beds were available, was thoroughly renovated. Accommodation is now available for 120 patients (40 males and 80 females). The ward for males was brought into use on 5th September, 1933, and the new ward for females on 30th April, 1934.

A unit for the accommodation of the increased nursing staff was also built and occupied on 21st August, 1933.

For the year ended 31st December, 1933, the admissions to “Carrara” totalled 745; discharges, 693; daily average number resident, 41; patients remaining in hospital on 1st January, 1934: men, 26; women, 27; total, 54. Average daily number of occupied beds, 38; average cost per occupied bed, £64 15s. 3d. The annual cost of maintenance was £3,797 4s. 10d.; but the cost per bed has been calculated on the actual cost of maintenance only, viz., £2,461 1s. 9d.

The grounds were considerably improved during the year by the planting of additional shrubs and trees.

“Denistone House” Convalescent Hospital, Ryde, was closed on 21st August, 1933, and the area is being utilised as the site for the Ryde District General Hospital, now in course of construction.

V. K. ANGUS,
Matron.

6.—WATERFALL SANATORIUM.

Annual Report of the Medical Superintendent for the year ended
31st December, 1933.

*Honorary Consulting*Physicians.*—Dr. Cecil Purser and Dr. E. W. Fairfax.

Honorary Radiologist.—Dr. A. T. Nisbet.

Resident Staff.—Medical Superintendent, Dr. H. W. Palmer; Acting Senior Medical Officer, Dr. O. W. Mater; Junior Medical Officer, Dr. J. R. Shannon; Manager, Mr. R. C. Rowe; Matron, Miss K. Walsh; 1 Sub-matron, 33 Nurses, Clerk and Storekeeper, 1 Junior Clerk, 15 Male Attendants, 5 Cooks and 9 Artisans. A Dentist visits the Sanatorium for three full days in each two months.

Bed Accommodation.—There are 292 beds for males and 136 beds for females. Total beds, 428.

Number of tuberculous patients dealt with during 1933, 881.

Number of patients remaining in on 1st January, 1933, 403; admitted during 1933, 481, of whom 3 were non-tuberculous. Total under treatment, 881, and 3 non-tuberculous patients. Discharged, 433 (quiescent, 44; much improved, 71; improved, 157; unimproved, 161); died, 99. Remaining in residence on 31st December, 1933, 352 patients (males 231 and females 121).

Average number of beds occupied, males 247; females, 121.

Total cost of maintenance, £29,070 16s. 7d.

Average annual cost per patient, £79 17s. 2d.

CONDITION on discharge and average residence in days of the 430 tuberculous patients discharged in 1933

Condition on Discharge.	No. of Patients.	Average Residence in days.
Arrested	nil	.....
Quiescent	41	414
Much Improved	71	215
Improved	157	183
Stationary	56	39
Worse	105	200
Died	99	385
Total	529	249

" Arrested " : A case where no tubercle bacilli have been found in three successive weekly examinations of the sputum, and where the disease has been quiescent for two years.
" Quiescent " : To have no symptoms of tuberculosis, and no signs of tuberculosis except such as are compatible with a completely healed lesion.
" Much Improved " : Is where the general health is good, and the signs and symptoms of tuberculosis are materially diminished, while working capacity is more or less restored.

This is the scheme for classification of tuberculous patients formulated by the New South Wales Board of Control for the Campaign against Tuberculosis, and adopted by the various organisations.

CONDITION of patients on Admission and Discharge.

Condition on Admission.	Quiescent.	Much Improved.	Improved.	Stationary.	Worse.	Died.
L1, T1.....	10	3	2	5	2	...
L2, T1.....	13	19	34	12	11	1
L3, T1.....	7	29	52	17	29	23
L1, T2.....	...	...	...	...	...	...
L2, T2.....	3	3	8	3	5	2
L3, T2.....	7	17	53	15	46	47
L1, T3.....	...	...	...	...	...	...
L2, T3.....	...	...	...	4	...	1
L3, T3.....	1	...	8	...	12	25

L1. signifies disease limited to a part of one lobe of a lung, or slightly to two lobes.
L2. signifies extensive disease limited to one lobe, or moderately to two lobes.
L3. where more extensive disease than in L2.
T1. is where toxic symptoms are slight, and where complications if present are slight.
T2. is where toxic symptoms are present but not serious, and where complications are not extensive.
T3. where toxic symptoms or complications are more serious.

This is the classification of tuberculous patients formulated by the Board of Con'trol of the Campaign against Tuberculosis, and adopted by the various organisations.

OCCUPATIONS of Patients Discharged or Died during 1933.

Occupation.	Number.	Occupation.	Number.	Occupation.	Number.
Labourers	108	Clerks	30	Seamen	15
Housewives	85	Meehanics	24	Children	12
Shop assistants	48	Building trades	22	Professions	12
Housework	47	Station hands	19	Government employees.....	11
Indoor trades	38	Mining (coal)	16	Firemen	8
Factory hands	31	„ (quartz).....	3		

BIRTHPLACE of Patients Discharged or Died during 1933.

Country.	Number.	Country.	Number.	Country.	Number.
New South Wales	319	European Countries	24	Asia	3
Other Australian States	61	New Zealand	12	Wales	2
England	62	Ireland	12	India	2
Scotland	28	South Africa	4		

TABLE showing the Age Period at which the first symptoms of infection arose, and the number of male and female persons infected in each period, of all patients admitted since 1909. No re-admitted case is included a second time in this table.

Although careful inquiry was made concerning every patient, it was possible in only 10.8 of the cases to obtain a history of direct contact infection.

Sex.	1 to 9 years.	10 to 15 years.	16 to 19 years.	20 to 29 years.	30 to 39 years.	40 to 49 years.	50 to 59 years.	Over 59 Years.
Male	63	126	323	1,625	1,712	1,471	873	61
Female	72	160	382	1,164	778	358	177	49

TABLE showing the relative incidence of Infection among the different Members of the Families giving Tuberculous Family History.

Member in Family Infected.	Female Patients.	Male Patients.
	Per cent.	Per cent.
Mother	19.4	11.3
Father	9.3	11.3
Sister	17.1	12.9
Brother	9.0	23.8
Mother and father	2.1	3.0
Mother, father, brother and sister	2.1	2.3
Brother and sister	3.6	4.7
Father and brother	1.7	3.2
Mother and brother .....	.6	1.2
Mother and sister	2.3	2.2
Father and sister	3.3	.7
Mother, brother and sister	3.1	.2
Father, brother and sister .....	.2	.2
Husband or wife	8.6	8.9
Husband or wife with son .....	.8	1.4
Husband or wife with daughter	2.3	.7
Daughter	4.2	1.6
Son	1.7	2.0
Other infected persons	8.6	7.4

TABLE of Yearly Results, 1929 to 1933.

Year.	In Residence beginning of Year.	Admitted during year.	Arrested.	Much Improved.	Unimproved.	Improved.	Died.
1929	378	537	29	61	215	112	120
1930	372	509	20	60	175	94	103
1931	407	490	21	80	172	111	91
1932	414	476	29	60	139	150	106
1933	403	481	44	71	157	161	99

GENERAL REVIEW OF THE YEAR'S WORK.

The foregoing tables show the number of patients undergoing treatment during the year 1933, and the condition of those discharged. When one considers the cases of advanced disease that have to be admitted, these results compare very favourably with those of previous years. Notwithstanding all the benefits that are available through the present system of co-ordination, very few tuberculous persons are admitted to Waterfall in that early and suitable stage which enables treatment and care to satisfactorily cope with the disease. If tuberculosis is to be controlled and the affected person treated with success, it is essential that each patient must come under medical supervision as soon as the first symptoms of the disease appear. To enable this to be done, it is necessary that the public should be educated concerning tuberculosis; especially that attention should be directed to the early signs and symptoms of the disease, to the extreme danger of delaying treatment if recovery is to be obtained, and to the facilities that are available at clinics and dispensaries for diagnosis and advice.

As in previous years too great a proportion of the patients admitted were advanced toxic or chronic cases, for whom little could be done. Both these types of patient seriously interfere with the treatment of the suitable case. The presence of hopeless advanced cases only depresses those cases that are getting better, and retards their progress, while the chronic cases become discontented at their non-improvement and blame their environment, instead of recognising that their condition is such that little improvement is possible. This depressing effect has been specially noticeable during the year, for a number of suitable sanatorium cases left after a few days' residence for this very reason. These cases are discharged as "stationary."

The chronic phthisical case if provided with an invalid pension requires very little additional help. If needing institutional treatment an establishment less costly than a sanatorium would adequately serve the purpose.

Of the male patients discharged during the year, 15 men all much improved were transferred to the Red Cross Home at Exeter, and 12 practically quiescent cases were transferred to the Picton Lakes Village Settlement. Of the patients who were unimproved by their stay at Waterfall, 10 men and 12 women were transferred to the Randwick Auxiliary Hospital.

Treatment was along ordinary sanatorium lines, though the special needs of each individual case were met. All cases are kept strictly at rest while the disease is active, the large open air wards allowing the maximum of fresh air and sunshine. Dietary is very liberal, and the menus so arranged and varied that similar meals are repeated only at widespread intervals. With the improvement in each patient's condition graduated exercise is allowed, and when progress is satisfactory, light work is provided. For patients capable of heavier exercise there is a carpenter's workshop equipped with motor power; and for those interested in gardening, vegetable plots are available where patients can raise crops, the vegetables grown being bought by the Sanatorium at current market prices.

Pneumothorax treatment was applied in 35 cases, 12 of which were discharged much improved, but requiring further lung collapse before being fully recovered. Several hæmorrhage cases were benefited considerably by this form of treatment.

The value of halivol oil, given in association with bicalcium phosphate, was tested on a number of patients, but the improvement obtained was inconclusive.

During the last three years there has been a falling off in the number of admissions, and this year patients have not remained in residence as long as previously, the result has been that there have always been a number of beds unoccupied. During May it was decided to close one ward, and in September a second small ward was closed, but this second ward was again occupied towards the end of the year.

Maintenance of buildings, improvements, etc.—Few structural improvements have been carried out during the year. An outside lavatory block for use of the chalets was completed by the Public Works Department, and a detached school building was erected by the Education Department for housing the teacher and children.

Owing to very heavy floods, the pumping plant had to be again overhauled, and considerable repairs and replacements have been made in the reticulation service.

Opportunity was taken to thoroughly paint and renovate each ward in turn, so that all the wards are now in good condition.

Very few improvements have been possible owing to the great shortage of labour, and unless more labour is provided it will be impossible to keep the sanatorium in a proper state of efficiency. However, the grounds and entrance gardens have been maintained in fair order, and the orchard and vegetable plots kept in fair cultivation.

All other essential services have been well maintained.

The milk supply has been very satisfactory, half the supply being obtained from the Berry Agricultural Farm, and half from Sydney distributing agents.

The patients were well supplied with various forms of entertainment. Concert parties visited the institution on frequent occasions, and cinema performances were given once or twice a week. Our thanks are due to the film proprietors, the Hon. R. B. Orchard, Esq., O.B.E., Mr. R. Lawson, the Smith Family, and all the visiting artists, who have made these entertainments possible and successful.

In addition to these forms of amusements there is a complete wireless installation with head phones to each bed; also good libraries for men and women patients, while the men have two billiard tables, and the women have one full-sized billiard table and a large ping pong table. For outdoor amusements the men have a large bowling green and the women a croquet lawn.

There is also a canteen controlled by a Patients' Committee. Any profits from sales are devoted towards providing forms of amusement. Last year it was decided by this Committee to instal a talkie cinema, as great difficulty had been experienced in obtaining ordinary cinema films.

There has been a marked falling off in the admissions of children, there being only three admitted in 1933, whereas 12 were discharged. Children do remarkably well here, and it is a great pity more use is not made of the accommodation available. There is a special ward for boys, and the Education Department has made full provision for schooling by erection of a school building and provision of a teacher.

The dentist has paid regular visits throughout the year, and his time has been fully occupied.

Early in the year Dr. A. T. Nisbett was appointed an honorary radiographer to the Sanatorium, and his services have been most valuable.

For the greater part of the year each Saturday was occupied in the demonstration of cases to Sydney University medical students in their final years of study. Students visit the Sanatorium in groups of from eight to ten, and spend the whole day at clinical work. As part of their medical course, each student is required to pay two full time visits.

As in previous years very careful inquiry has been made into the age period at which individual patients developed the first symptoms of tuberculosis (see table a' o e). Close inquiry was made in each individual case as to the date on which had occurred the very first symptom that might have been caused by tuberculosis in that particular case. Although possibly many of these symptoms were not actually due to tuberculosis, for the sake of the investigation they have been accepted as tuberculous in origin, and the age at which such first symptom occurred has been taken as the age period of commencing disease. From these investigations it does not appear that tuberculous infection in childhood is common in New South Wales.

H. W. PALMER,
Medical Superintendent.

7.—LIDCOMBE STATE HOSPITAL AND HOME.

Report of the Medical Superintendent for the year ended
31st December, 1933.

Honorary Visiting Staff.

Honorary Staff Surgeon, H. C. Rutherford Darling, M.D., M.S., F.R.C.S.; Honorary Assistant Surgeon, J. A. Lawson, M.B., Ch.M.; Honorary Ear, Nose and Throat Surgeon, N. M. Macindoe, M.B., Ch.M.; Honorary Ophthalmic Surgeons, Falkner J. Blaxland, M.D.; A. L. North, M.B., Ch.M.; A. E. F. Chaffer, Ch.M.; Honorary Urologist, C. M. Edwards, M.B., Ch.M.; Honorary Dermatologist, vacant; Honorary Radiographer, Colin R. Cole, M.B., Ch.M.

Administrative Staff.—Medical Superintendent, R. M. McMaster, M.B., Ch.M., D.S.O.; Senior Medical Officer, J. McManamey, M.B., B.S.; Junior Medical Officers, R. Segal, M.B., B.S.; V. G. Crowley, L.M.S.S.A.; Manager, R. J. Brown; Matron, Miss E. M. E. Mance.

Constitution of Hospital Staff on 31st December, 1933 :—Medical Superintendent; Resident Medical Officers, 3; Dispenser; Manager; Clerks, 3; Matron; Sub-matron; Nurses, 49; Other Female Staff, 2; Attendants, 65; Other Male Staff, 17.

A Dentist visits the institution regularly each week, and an X-ray Technician twice a week.

Number of Wards and Beds.

Hospital Division.		General Division.		Total Accommodation.	Number of Beds.
Ward No.	Number of Beds.	Dormitories.	Number of Beds.		
4	27	9	92		
5	43	12	60		
6	61	21	75		
7	58	22	75		
10	71	23	75		
11	65	24	75		
14	50	25	75	Hospital Division	919
16	61	26	75		
17	61	23	22	General Division	763
18	61	29	25		
19	61	30	23		
20	50	15A	44		
27	110	Emergencies (Casuals)	6		
28	92	Outside Locations	41		
Infectious Division.	48				
15	919	...	763	Total	1,682

The foregoing figures represent the total capacity of the various hospital wards and dormitories, and show accommodation for 919 patients and 763 inmates, a total of 1,682.

Admissions and Discharges.—1933 : Remaining in on 31st December, 1932, 1,512; admitted, 1933, 2,521; discharged, 2,060; died, 521. Remaining in on 31st December, 1933, 1,452—hospital division, 871; dormitories, 581.

Average Daily Number of Persons Resident.—1929, 1,639; 1930, 1,591; 1931, 1,563; 1932, 1,556; 1933, 1,539.

1933 : Total cost of maintenance and treatment of patients and inmates, £68,019 18s. 4d. Average annual cost of patients and inmates, £44 3s. 11d.

Work of Honorary Medical Officers.—The various honorary surgeons continue to do excellent work. Apart from their valued advice in consultations and diagnoses, the following operations were performed by them during 1933 : Dr. Darling, 71; Dr. Lawson, 21; Dr. Blaxland, 17; Dr. North, 2; Dr. Chaffer, 39; Dr. Macindoe, 34; Dr. Edwards, 46. Dr. Cole, Hon. Radiologist, paid 52 visits.

Dr. North, Hon. Ophthalmologist, tendered his resignation in March, his work being since carried out by Dr. A. E. Chaffer.

The position of honorary dermatologist has remained vacant since the resignation of Dr. Chapman. The filling of this position and the appointment of an honorary physician are very desirable, and would tend to further raise the general efficiency of the hospital.

Work of the Staff.—The resident medical staff carried out 61 major and minor operations. The work of the whole staff continues of the same high standard.

X-ray Department.—This department, opened in September, 1930, has given excellent service; 945 X-rays were taken in 1933.

Massage Department.—The massage department continues to do good work; 97 individual cases received treatment, of whom 49 can be classed as recovered, 23 relieved, 11 unrelieved; 23 patients are still under treatment.

INFECTIOUS DIVISION.

On 15th November, 1933, an infectious section was opened for the admission and treatment of male and female patients of all ages suffering from infectious diseases. This has already proved of great service, as it partially obviates the necessity for transporting patients in the neighbourhood long distances to the Coast Hospital. The present accommodation is 48 beds and cots, but it is hoped that by the erection of two similar units the accommodation may ultimately be trebled. The number of patients treated from 15th November to 31st December was 55, the diseases being almost entirely diphtheria and scarlet fever. An additional resident medical officer (Dr. V. G. Crowley) and 7 additional nurses were appointed for duty in this section.

Diets.—In addition to the diets, provided in accordance with the approved scale, the medical officers lists have been sufficiently liberal to satisfy the full requirements of all who were unable to partake of the scale allowance. The new kitchen, almost completed at the end of the year, should prove a valuable factor in supplying more variations and further improvement of the dietary.

New Laundry.—On 20th December, the new laundry was completed and placed in commission. The provision of this long-felt want has already resulted in increased cleanliness and improved appearance of the laundered articles, and gives much added comfort to the staff and inmates engaged in the work.

Recreation for the Inmates.—The cinema, installed some years ago, continues to give popular service, and the weekly programme of silent pictures, provided free of cost by the generosity of the Universal Film Manufacturing Co. (Australia), Ltd., is much appreciated. It is evident, however, from the increasing frequency of "repeat" programmes that the supply of silent pictures is becoming exhausted, and this source of pleasure to our men will be thus dried up. The installation of a "talking" cinema is very much desired.

In addition to the picture shows, numerous first-class entertainments have been provided by our many kind friends, who have attended, often at much inconvenience and discomfort to themselves, to give pleasure to our patients. We are specially indebted to the "Smith Family," who, despite unusually heavy demands upon their funds by outside claims, made their annual distribution of Christmas cheer to the whole of our patients and inmates. During the year, the "Family" also arranged several broadcast concerts from our hall, which, with the community singing introduced thereat, were greatly enjoyed by those privileged to participate.

We also have to thank the "Smith Family" for the valuable presentation of a small printing press, which has already proved its usefulness in the official work of the hospital.

Radio Installations.—The wireless installations provided by the generosity of the late Mr. James Hennessy, a former patient of this hospital, continues to give much pleasure to our patients and inmates.

Billiard Room.—The billiard room in the main division of the institution maintains its popularity amongst the limited number of inmates able to utilise it. The extension of this room and the provision of another table would be a very great boon.

Bowling Green.—The bowling green continues to be extensively used, and is much appreciated by both patients and inmates. Several matches were arranged with outside clubs and kindred institutions, visits being interchanged with much pleasure to those participating.

OUTDOOR SECTIONS.

In the outdoor sections of the institution, notwithstanding a marked shortage of able-bodied inmate assistance, the year's work has shown steady progress. In the ornamental gardens and grounds the bright appearance of the various plots has been well maintained. The grounds surrounding the hospital wards have been rearranged and brightened with flower beds, and improved lawns and paths. In the winter, additional trees and shrubs were planted in new avenues, and to fill vacant spots in old plantations.

Dairy and Farm Work.—The standard of our milking herd continues to be well maintained by carefully-selected additions of young stock from tested dams, and regular judicious culling out of inferior production and unprofitable cows. The testing of our cows under the Department of Agriculture's Herd Improvement Scheme has also been most helpful in building up and improving the milking qualities of the herd. At the Royal Agricultural Society's Annual Show our Friesians were again highly successful, securing numerous awards, including "Championship" for bull, and "Champion Cow" under Peter's Ice Cream Competition for milk production.

The health conditions of the herd continues excellent, the results of the annual tuberculin test being again highly satisfactory.

During the year, 82,400 gallons of milk were produced at the average cost of 11.77d. per gallon. This supply fully provided for the requirements of the hospital and general inmate population. One hundred and twenty-two tons of green forage were grown in the cultivation areas, thus assisting to reduce the cost of milk production.

Vegetable Garden.—163,241 lb. of vegetables of all kinds were produced in the vegetable gardens.

Piggery.—The piggery continues to be a valuable asset to the institution. Sales during the year amounted to £912 18s. 6d., and pork to the value of £123 4s. 7d. was consumed by the inmates.

The approaches to the piggery and the grounds around the buildings have been much improved by the formation of paths and lawns, and the planting of shade and ornamental trees.

R. M. McMASTER,
Medical Superintendent.

8.—LIVERPOOL STATE HOSPITAL AND HOME.

Report of the Medical Superintendent for the year ended 31st December, 1933.

Honorary Visiting Staff.—Consulting Surgeon, B. T. Edye, F.R.C.S.; Surgeon, I. D. Miller, M.B., F.R.C.S.; Assistant Surgeon, C. H. Swanton, M.B., F.R.C.S. (on leave); Assistant Surgeon, A. L. Webb, M.B., F.R.C.S.; Relieving Assistant Surgeon, J. A. Lawson, M.B., Ch.M., F.R.A.C.S.; Anaesthetist, J. Goldman, M.B., Ch.M.; Ear, Nose and Throat Surgeon, H. L. Clowes, M.B., Ch.M., F.R.C.S.; Dermatologist, W. A. McDonald, B.A., M.B., Ch.M.; Medical Officer, J. Pirie, L.R.C.P., L.R.C.S. (Edin.), L.F.P.S. (Glasgow).

Staff.—Medical Superintendent, Donald Wallace, M.A., M.B., Ch.M.; Junior Medical Officer, C. R. O'Brien, M.B., Ch.M.; Manager, J. J. Ranshaw; Matron, L. W. McIntosh.

Constitution of Hospital Staff on 31st December, 1933.—Medical Superintendent, Junior Medical Officer, Manager, Matron, Sub-Matron, Nurses 15, Clerks 2, Storekeeper, Dispenser, Male Attendants 19, other Male Staff 10, other Female Staff 1. A Dentist visits the Institution fortnightly.

Number of Wards and Beds.—Hospital Division, 13 wards containing 314 beds (plus 21 emergency beds); General Division, 13 dormitories, containing 575 beds. Total accommodation, 889 beds.

Admissions and Discharges for the year ended 31st December, 1933.—In residence 1st January, 1933, 827; admitted, 2,162; total, 2,989; discharged, 1,883; died, 253; remaining 31st December, 1933, 853; average daily number, 861. Total cost of maintenance and treatment (patients and inmates), £34,231 3s. 10d; average cost per inmate, £39 15s. 2d.

Summary of Patients Treated in the various Wards during 1933.

Hospital Section.	In Hospital, 1st January, 1933.	Admitted during year.	Discharged during year.	Died during year.	In Hospital, 31st December, 1933.
Cancer Wards	18	160	105	53	60
General ,,	221	654	482	168	225
Totals	279	814	587	221	285
District Ward	25	324	294	32	23
Grand Totals.....	304	1,138	881	253	308

Out-patients.—12,329 attendances were recorded during the year, including 3,014 dressings and operations in the district ward. The services of the Honorary Medical Officer (Dr. Pirie) have been available from time to time as required.

Hospital Wards.—The general hospital accommodation was fully utilised throughout the year. 128 operations were performed under general anaesthesia, 43 of which could be classed as major operations.

Improvements.—The following works were completed during 1933:—Reconditioning of roads and construction of storm-water drains completed; extensive alterations to kitchen, laundry and dining room carried out; kiosk erected within the grounds of the Institution.

Recreation of Inmates.—In addition to the regular entertainments provided by "wireless," concerts have been arranged at frequent intervals by persons interested in the Institution. In this connection special mention should be made of the splendid entertainments provided for the patients and inmates by the "Smith Family" at Christmas time.

New wireless sets, installed by the "Hospital Saturday Fund" during the year, are much appreciated by the inmates.

Farm and Dairy.—The need for green and uncooked vegetables and fresh milk as a corrective of the regulation institutional diet has been kept in view in directing the operations in the vegetable garden and dairy.

D. WALLACE,
Medical Superintendent.

MANAGER'S REVIEW OF OUT-DOOR WORK FOR THE YEAR ENDED 31ST DECEMBER, 1933.

The supply of inmate labour was fairly well maintained throughout the year, and satisfactory progress was made with the out-door work.

Dairy Farm.—27,509 gallons of milk was produced. A herdsman was appointed to this section during the year.

Piggery.—Revenue derived from the sale of pigs amounted to £148 19s.

Farm, Vegetable Garden and Orchard.—These sections yielded 37,057 lb. of vegetables, 11,885 lb. of fruit, and 40 tons of green feed in 1933.

Bakery.—The usual high standard of quality was maintained. The total bread consumption was 266,428 lb.; buns, 255 dozen; and cake, 18,902 lb.

Condition of Buildings.—All Institution buildings were maintained in a reasonable state of efficiency.

Gardens and Grounds.—The condition of the garden and grounds has been well maintained throughout the year.

J. J. RANSHAW,
Manager.

9.—NEWINGTON STATE HOSPITAL AND HOME FOR WOMEN.

Annual Report for the years ended 31st December, 1933.

Honorary Medical Staff.—Surgeon, Walter A. Ramsay Sharpe, M.B., M.S., F.R.C.S. (Edin.); Ophthalmic Surgeon, F. G. Roberts, M.B., Ch.M.; Neurologist, Andrew Davidson, M.D.

Staff.—Medical Superintendent, Howard K. Denham, B.A., LL.B., M.B., Ch.M.; Visiting Medical Officer, Francis H. Furnivall, M.R.C.S. (Eng.), L.S.A. (Lond.); Resident Medical Officer, Lottie Sharfstein, M.B., Ch.M.; Manager, S. T. Creagh; Matron, Emily Wood; Dispenser, 1; Sub-matron, 1; Clerk, 1; Junior Clerk, 1; Storekeeper, 1; Nurses, 42; other Female Staff, 6; other Male Staff, 12. A Dentist visits the Institution fortnightly.

Total Admissions and Discharges.—In Institution on 1st January, 1933, 655; admitted during year, 1,165; discharged, 993; died, 237; remaining on 31st December, 590. Average daily number resident, 639.

Total Expenditure.—£25,272 12s. 8d. Average annual cost per bed, £39 11s.

Hospital Division Statistics.—There are 392 beds available. The statistics for the year 1933 are as follows:—In Hospital, 1st January, 1933, 361; admitted during year, 814; discharged, 630; died, 237; remaining in hospital on 31st December, 308.

Classification of Cases Discharged.—General diseases, 135; alimentary, 21; circulatory, 196; genito-urinary, 48; osseous and arthritic, 15; nervous, 82; respiratory, 70; skin and glands, 71; wounds and fractures, 46; senility, 148; miscellaneous, 35. Total, 867 cases.

Result of Treatment.—Cured, 174; relieved, 319; unrelieved, 137; died, 237. Total, 867.

REVIEW OF YEAR'S WORK.

The new entrance roadway mentioned in the report for 1931–32 was completed and put into use in the early part of 1933.

Portion of the domestic water supply has had attention. The Public Works Department had the main cleaned, and the services connected thereto are now much improved. Other services are under investigation by the Works Department, with a view to provision of an efficient service to the Hospital sections G and H and the Yard division.

Work is in progress for installation of a boiler in lieu of the old Babcock and Willcox.

The laundry equipment has been improved by re-arrangement of the plant, substitution of a new washing machine for one of old type, and of a new steam drying room in lieu of the fuel type one. An additional hydro extractor has been installed.

A new building to accommodate 23 members of the nursing staff was completed towards the end of the year, and arrangements put in hand for its occupancy early in 1934.

The conversion of the cottage formerly occupied by the foreman into a residence for the manager was completed.

Three new inspection pits were constructed on the sewerage line of service.

The following works are needed, and each one has been the subject of special request:—

- (1) Morgue.
- (2) Additional dormitory accommodation for male inmate workers.
- (3) Cottage for Overseer.
- (4) Reforming and remaking roads within the grounds; also remaking roadway from Sutherland-street to Day-street. This latter is an Institution roadway and it is in a dangerous condition owing to corrugation. It is the only road access to the Hospital, and all vehicular traffic, including ambulances, has to pass over it.

Properly protected coal bunkers are a need, and have been asked for, but so far no advice has been received in regard to their provision.

Regular entertainments have been provided by various organisations and individual parties, and these functions have been enjoyed, as have also the special entertainments during the festive season of Christmas and New Year. The thanks of the administration is tendered to all concerned for the pleasant functions and gifts provided for the inmates.

H. K. DENHAM,
Medical Superintendent.

FARMING AND DAIRYING OPERATIONS.

The work in these sections was satisfactorily carried out, and the dairy herd benefited by the addition of twelve milking cows from the Coast Hospital herd. This addition will permit of the disposal of a number of aged animals which have reached the stage when they are unprofitable in the herd.

Farming operations resulted in the production of 61,100 lb. of vegetables, 1,418 lb. of fruit, 104 tons of fodder, and 39,200 gallons of milk. The revenue collected amounted to £446 3s. 8d.

Orchard.—The orchard, which comprises an area of 1 acre, has been the subject of a report by the Department of Agriculture. The trees are old and exhausted, and the report recommends the planting of a new orchard on another site. A site has accordingly been selected for planting new trees during the forthcoming season.

S. T. CREAGH,
Manager.

10.—STATE HOME FOR AGED AND INFIRM MEN, GEORGE-STREET, PARRAMATTA.

Report for the year ended 31st December, 1933.

Visiting Medical Officer.—Dr. W. S. Brown.

Officer-in-Charge.—G. M. Strange. Attendants, 5.

Number of beds in hospital, 16; in dormitories, 325; total, 341.

Admissions and Discharges.—Remaining in on 31st December, 1932, 244; admitted during the year, 2,221; discharged, 2,226; deaths, 20; remaining in on 31st December, 1933, 219; average daily population, 291; annual cost of maintenance, £7,150 10s. 8d.; average annual cost per inmate, £24 11s. 6d.

Hospital Division.—Number in hospital on 31st December, 1932, 15; admitted during year, 118; discharged, 100; died, 20; remaining in on 31st December, 1933, 13. Number of attendances by Visiting Medical Officer, 237. Inmate patients transferred to other institutions, 97. Inmate workers transferred to other institutions, 968.

General.—The buildings were maintained in a reasonable state of efficiency; new fencing on two sections of riverside property has been completed by inmate labour. Roofs of main building and exterior of residence have been painted by the Public Works Department.

Recreation and Amusements.—In addition to the regular entertainments provided by wireless, concerts have been arranged by various concert parties during the year. Special thanks are due to the "Smith Family" for their annual distribution of Christmas cheer.

11.—STATE HOME FOR THE BLIND AND MEN OF DEFECTIVE SIGHT AND SENILITY, MACQUARIE-STREET, PARRAMATTA.

Annual Report for the year ended 31st December, 1933.

Staff.

Visiting Medical Officer: Dr. W. S. Brown. *Officer-in-Charge:* Mr. H. A. Pyne; Attendants, 4; Bakers, 2.

Admissions and Discharges.—Remaining in on 31st December, 1932, 201; admitted during 1933, 751; remaining in on 31st December, 1933, 203; total number of beds, 228; daily average number resident, 213. Total cost of maintenance, £5,239 19s. 11d.; average cost per bed, £24 12s.

Dental Work.—A qualified Dentist visits the institution monthly.

Bakery.—987,466 lb. of bread and 48,816 lb. of currant cake were baked in the Home, the whole of which was distributed to the State Hospitals at Lidcombe, Newington and Waterfall, and the George-street and Macquarie-street Homes. 797 dozen buns were also distributed at Easter.

General.—Inmates' clothing, bedding, etc., with the exception of boots and hats, were made in the Home, and all carpentry work, repairs to buildings, painting, bricklaying, etc., are carried out by inmate labour under the supervision of the Officer-in-Charge.

Recreations and Amusements.—Inmates have been entertained by various concert parties during the year, and at Christmas time the Salvation Army and the "Smith Family" distribute gifts, which are greatly appreciated by the recipients.

12.—STATISTICAL SUMMARY.

TABLE I.—Summarised Statement of Expenditure:—Lady Edeline Hospital for Babies and Strickland Convalescent Home for the year ended 31st December, 1933.

Head of Expenditure.	Lady Edeline Hospital for Babies.	Strickland Convalescent Hospital.	Total.
	£	£	£
Salaries	874 5 11	815 8 5	1,689 14 4
Gratuities	203 9 6	218 18 0	422 7 6
Provisions	484 5 4	920 2 6	1,404 7 10
Drugs, Dressings, etc.	33 16 10	10 18 5	44 15 3
Fuel and Lighting	172 15 7	139 18 3	312 13 10
Forage	5 16 4	123 7 5	129 3 9
Materials for Repairs and Renewals	21 16 1	57 15 7	79 11 8
Transport Expenditure	4 2 0	12 2 3	16 4 3
Clothing and Drapery	10 0 8	72 0 0	82 0 8
Hardware—Ironmongery, etc.	3 13 0	38 5 7	41 18 7
Telephone Charges	54 2 8	31 14 4	85 17 0
Miscellaneous	21 18 3	20 11 0	42 9 3
Furniture, etc., for New Wards.....	.....	1,336 3 1	1,336 3 1
Total	£1,890 2 2	£3,797 4 10	£5,687 7 0
Average Daily Number of Patients	23	38	61
Average Cost for Occupied Beds	£82 3 5	*£64 15 3	£93 4 8

* The cost per bed has been calculated on the actual cost of maintenance only—viz., £2,461 1s. 9d.

STATISTICAL SUMMARY.

TABLE II.—SUMMARY STATEMENT of Expenditure, State Hospital and Homes of Lidcombe, Liverpool, and Newington, Parramatta Homes (George and Macquarie street), and Waterfall Sanatorium for the year ended 31st December, 1933.

Head of Expenditure.	Lidcombe.	Liverpool.	Newington.	Waterfall Sanatorium.	Parramatta.		Total.
					Macquarie-st.	George-st.	
Salaries and Payments in the	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Nature of Salaries	27,491 0 8	11,458 12 10	10,309 1 8	11,415 14 11	1,926 17 6	1,753 5 4	64,354 12 11
Gratuities to Inmates	4,195 7 3	3,157 1 1	2,067 14 9	1,932 1 9	492 15 6	407 0 8	12,192 1 0
Provisions	15,584 7 2	10,710 6 2	6,044 16 0	9,387 4 11	6,071 7 6	2,697 10 9	50,495 12 6
Drugs, Dressings, Surgical Appliances, etc.	2,283 14 8	1,455 18 11	919 2 2	427 16 9	5 18 2	7 1 3	5,099 11 11
Fuel and Lighting	2,381 14 4	1,871 2 3	1,526 4 7	1,708 17 8	295 9 7	223 1 11	8,006 10 4
Forage	2,874 2 0	1,261 12 11	1,820 6 7	177 16 6	.....	24 12 6	6,158 10 6
Materials for Minor Repairs, Additions and Renewals to Buildings and Plant	1,639 19 5	671 11 11	608 16 5	590 12 11	55 14 6	84 11 8	3,651 6 10
Transport Expenditure, including Freight and Cartage	1,551 13 5	794 15 0	687 16 4	1,795 13 1	118 1 6	206 15 9	5,254 15 1
Clothing and Drapery	5,233 0 9	2,239 2 10	1,347 5 7	790 13 1	257 10 5	676 15 3	10,544 7 11
Hardware, Ironmongery, and General Stores	1,035 6 5	553 2 9	357 12 2	291 18 11	162 10 10	91 11 10	2,492 2 11
Furniture	147 11 9	151 17 7	.....	10 13 7	.....	.....	310 2 11
Office Expenses, Telephones, Stationery and Printing	508 8 0	194 12 5	193 18 0	176 13 6	34 6 4	56 17 8	1,164 15 11
Livestock and Farm and Garden Requisites	97 7 6	60 12 10	72 17 9	40 14 8	5 6 8	0 18 3	277 17 8
Miscellaneous	408 6 6	202 17 11	166 9 6	153 17 0	18 4 0	40 2 6	989 17 5
Add Exchange	65,431 19 10 3,181 7 11	34,783 7 5 290 5 9	26,062 1 6 1,137 17 8	28,900 9 3 544 0 4	9,444 2 6 351 3 10	6,370 5 4 946 19 9	170,992 5 10 6,451 15 3
Deduct Exchange	68,613 7 9 260 2 9	35,073 13 2	27,199 19 2 1,790 2 0	29,444 9 7	9,795 6 4 4,402 16 9	7,317 5 1 163 9 3	177,444 1 1 6,616 10 9
Total	68,353 5 0	35,073 13 2	25,409 17 2	29,444 9 7	5,392 9 7	7,153 15 10	170,827 10 4
Stock on hand 31st December, 1932	7,347 1 10	2,858 18 5	2,636 1 5	1,535 17 6	842 11 2	640 7 7	15,860 17 11
Grand Total	75,700 6 10	37,932 11 7	28,045 18 7	30,980 7 1	6,235 0 9	7,794 3 5	186,688 8 3
Deduct—							
Stock on hand 31st December, 1933	6,412 19 2	3,264 18 3	2,320 2 3	1,001 8 8	896 19 2	595 8 10	15,091 16 4
Proceeds of Sales, etc....	1,267 9 4	436 9 6	453 3 8	308 1 10	98 1 8	48 3 11	2,611 9 11
Total Deductions	7,680 8 6	3,701 7 9	2,773 5 11	1,909 10 6	995 0 10	643 12 9	17,703 6 3
Total Cost	68,019 18 4	34,231 3 10	25,272 12 8	29,070 16 7	5,239 19 11	7,150 10 8	168,985 2 0
Average daily population	1,539	861	639	484*	213	291	4,027
Average annual cost per inmate...	44 3 11	39 15 2	39 11 0	60 1 3	24 12 0	24 11 6	41 19 3
Annual contributions towards maintenance	12,512 13 8	6,290 6 0	6,346 3 3	3,307 9 11	1,241 5 10	650 3 10	30,348 2 6

* Patients 368 (£79 17s. 2d.), or plus inmate workers 115 (£60 1s. 3d.).

SECTION IV.

Report of the Principal Microbiologist for the year ending 31st December, 1933.

CONTENTS.

PART I.—Routine work, comprising Microbiological, Pathological, Serological, and Medico legal Examinations, and Examination of Rats for Plague	97
PART II.—Investigational work: Post-operative Tetanus in New South Wales during the years 1930-1933 (E. L. Morgan)	100

Staff.

Principal Microbiologist.—Ernest Leslie Morgan, M.B., Ch.M.

Assistants Microbiologists.—Elsie J. Dalyell, M.B.; Marie M. Hamilton, M.B., Ch.M.; Stanley M. King, M.R.C.S., L.R.C.P.; Isobel M. Brown, M.B., B.S.; Muriel C. Letchford, B.Sc.

Senior Laboratory Assistant.—John O. Sergeant. Laboratory Assistants, 2; Junior Assistants, 8; Attendants, 4.

Clerk and Librarian.—Florence Stuart Wearne; Shorthand-writers and Typists, 3; Messenger, 1.

Sir,

I have the honour to submit the following summarised report dealing with the work performed in the Microbiological Laboratory during 1933.

The amount of revenue collected from examinations, sale of sera, etc., was £230 18s. 0d.

The volume of work for the year as represented by the number of specimens examined is set out below.

	1932.	1933.
General laboratory examinations	59,988	69,151*
Examination of rats for plague	3,812	4,032
	<hr/> 63,800	<hr/> 73,183

Plague.—The State has continued free from plague since 1910. Trapping of rats is continuous both at Sydney and Newcastle along the waterfronts used by overseas shipping.

Diphtheria.—6,027 swabbings were examined in 1933, and 5,749 in 1932. There were 98 tests for toxicity in 1932 and 53 in 1933.

Typhoid.—The number of blood specimens submitted for the Widal reaction was 405 in 1932 and 368 in 1933. In both 1932 and 1933 there was a very low incidence of typhoid fever in New South Wales.

The examinations of specimens of urine and faeces numbered 506 in 1932, 464 in 1933. Miscellaneous examination of water, milk, etc., in 1933 totalled 4.

The most serious localised outbreak of typhoid fever which has been experienced for some years in New South Wales occurred at a religious convention held near Cowra in February, 1933. Altogether, there were 36 known cases, with 10 deaths. A "carrier," known to the department, was found to have attended the convention. This "carrier" (J.B.) suffered from typhoid fever in 1918; he was known to be excreting *B. typhosus* in 1923, and repeated examinations from that date to the present time have always revealed the presence of this organism in his excreta.

Hydatids.—92 examinations were made in 1932 and 79 in 1933. Of these 24 were of sputa, etc., of which 8 were positive; of the 55 complement deviation tests in 1933, 7 were positive.

Malaria.—26 blood slides were examined in 1933, of which four showed the presence of *Plasmodium vivax*.

Anthrax.—One shaving brush and three human lesions were examined during 1933 for *B. anthracis*. One human lesion proved positive.

A further human case of anthrax, with recovery, was reported from Tocumwal during the year; no examination was made in the departmental laboratory in connection with this case.

Histological Examinations.—There was a slight increase in the number of histological examinations. In 1932, tissues submitted numbered 2,022, of which 581, or 28.73 per cent. were malignant; in 1933 2,058 examinations were made, of which 531, or 25.80 per cent., were malignant.

Blood Counts.—1,108 bloods were submitted for full and differential counts in 1933, compared with 944 in 1932. Blood typing was carried out on seven occasions, and 5 coagulation time tests were made.

Biochemical Work.—6,359 examinations were made in this section in 1933, compared with 4,646 in 1932. Of the examinations, 2,626 were carried out at the Coast Hospital laboratory. The contemplated appointment of a medical officer to the laboratory at the Coast Hospital should afford relief to this section of the Microbiological Laboratory, where the progress of modern medicine is making ever increasing demands.

* 19,335 of the specimens were received from private practitioners, and 23,766 from subsidised hospitals.

Venereal Diseases—Syphilis.—The number of serological examinations required for syphilis was 28,866 in 1933, compared with 25,608 in 1932.

In 1933, 113 examinations were made for spirochaetes, and 130 in 1932. These tests are mainly asked for by the Venereal Diseases Division with the object of avoiding delay in treating recently infected patients.

Gonorrhoea.—8,617 examinations of smears, etc., were made for gonorrhoea in 1933, compared with 6,505 in 1932. There were 5,464 complement deviation tests in 1933, against 4,433 in 1932.

Medico-legal Examinations.—Examinations were made of 86 parcels of exhibits in 1933, compared with 87 in 1932. Of these examinations, 16 in 1932 and 12 in 1933 were of implements, clothing, and human remains, etc., in connection with charges of bodily injury, manslaughter, or suspected murder; and 66 in 1932, and 74 in 1933 were of clothing, smears, etc., associated with sexual offences.

Bacteriological Examination of Sydney Milk Supply.—During the year 423 samples of milk were examined on behalf of the Milk Board; of these 405 were examined for bacterial content; and the remaining 18 samples for tubercle bacilli. It is the intention of the Milk Board to have systematic examinations for tubercle bacilli carried out on the whole of the metropolitan milk supply, and these eighteen examinations represent the commencement of this investigation. In August and November an officer of this branch was detailed to Newcastle, where 144 samples of the above total were examined on behalf of the Milk Board.

Overcrowded Condition of the Laboratory.—The increase in the number of specimens sent to the laboratory for examination has further accentuated the dangerous overcrowding that has existed for many years, and to which attention has been repeatedly directed. A continuance of the present conditions must inevitably result in some serious accident, and relief must be speedily afforded either by curtailment of the number of specimens examined; or by providing adequate facilities for carrying out the present volume of work, and its inevitable expansion.

E. L. MORGAN,
Principal Microbiologist.

PART I.—TABLE showing the Routine Examinations made for the Various Branches of the State Department of Public Health, other Government Departments, Subsidised Hospitals, etc.

	Number of Examinations. Comparative Statement.	
	1932.	1933.
Department of Public Health—		
Head Office Submissions	1,976	9,447
Coast Hospital	7,261	7,969
" " (Night Clinic for V.D.)	2,555	1,273
David Berry Hospital, Berry	89	47
Lady Edeline Hospital for Babies	7	6
Lidcombe State Hospital and Home	3,960	3,671
Liverpool State Hospital and Home	877	901
Newington State Hospital and Home	1,361	1,394
Strickland Convalescent Home	1	.....
Waterfall Sanatorium	84	32
Medical Officer of Health, Metropolitan Districts	45	6
" " " Newcastle	21	4
Commonwealth Government	52	65
State Departments—		
Agriculture and Stock	1	.....
Board of Fire Commissioners	3	5
Chief Secretary (Fisheries Department)	4	1
Education Department	340	194
Government Stores Department	23	.....
Milk Board	276	423
Police Department	47	49
Prisons Department (Long Bay Gaol, etc.)	271	427
Public Works Department	58	55
Railways and Tramways Department	4	3
Reception House	1	.....
State Insurance Office	2	6
Sydney Harbour Trust	22	.....
Technological Museum	6	.....
Workers' Compensation Commission	3	2
Private Practitioners	20,294	19,335
Public Hospitals and Institutions other than State Hospitals	20,296	23,766
Municipal and Shire Councils	48	70
	59,988	69,151
Total Examinations—		
General	59,988	69,151
Rats for Plague	3,812	4,032
Grand Total	63,800	73,183

In the following Statement the Routine Work is divided into sections to disclose the purposes for which the various examinations were made.

	Number of Examinations. (Comparative Statement.)	
	1932.	1933.
A.—Microbiological Examinations.		
1. Of materials from diseased persons and animals—		
Actinomycosis	6	4
Bilharzia	2	1
Brucella abortus	11	8
Diphtheria (swabbings)	5,749	6,027
„ (toxicity)	98	53
Dysentery	13	22
Gonorrhœa (smears and urine)	6,505	8,617
„ (complement deviation test)	4,433	5,464
Hæmolytic streptococci	79	77
Hydatids (sputa, smears, etc.)	21	24
„ (complement deviation test).....	71	55
Leprosy (human)	8	5
„ (rat) .....	.....	1
Malaria	12	26
Mastitis (bovine) .....	.....	.....
Meningitis	177	164
Syphilis (Wassermann reactions)	13,219	14,732
„ (Kahn's flocculation test)	12,389	14,134
„ (spirochætes)	130	136
Tetanus	2	2
Tinea	25	9
Tuberculosis	4,104	4,452
Typhoid (Widal reactions)	405	368
„ (urine, faeces)	506	464
„ (miscellaneous, water, milk, etc.)	3	4
Unclassified: "No growths" from pus, etc. ...	1,298	1,465
Typhus	9	3
Vincent's Angina	58	51
Whooping Cough .....	.....	1
	49,333	56,369
2. Examinations for Anthrax—		
Human beings	5	3
Shaving brushes, etc. ....	.....	1
	5	4
3. Of Materials, etc.—		
Chemical closet contents	7	.....
Disinfectants	45	72
Lead Ortho Phosphate .....	.....	2
Rag flock	7	.....
Sewage, effluents, etc.	10	2
Water	138	95
Water from swimming baths	66	119
	273	290
4. Examination of Foods for Bacterial Contamination—		
Bread	9	.....
Meat	1	1
Milk—		
Special bacterial counts, Sydney milk supply, including examination for tubercle bacilli	93	18
Milk samples for bacteriological count sub- mitted by the Milk Board.....	293	405
Miscellaneous milks for bacterial counts, etc.	.....	52
Mussels	3	.....
Onions .....	.....	1
Oysters (parcels)	9	1
Sardines.....	1	.....
Sausages .....	.....	1
	409	479
5. Examinations for Food Poisoning	5	4
	5	4
B.—Pathological Examinations.		
1. Of Animals—		
Mammals	4	6
Fish	1	.....
	5	6
2. Of Body Fluids—		
Blood for full and differential count.....	944	1,103
„ „ blood typing	18	7
„ —coagulation time	7	5
Chemical Examinations—		
Blood for sugar	2,231	2,120
„ „ „ tolerance	95	87
„ „ „ urea	815	1,127
„ „ „ and creatinin	18	13
Urine for sugar (quantative)	38	69
„ „ „ urea	744	1,154
Test meal specimens	705	1,236
Calculus	6	11
Casoni Tests	2	5
Miscellaneous	144	337
Faeces	72	64
Urine (general examinations).....	1,103	1,448
	6,942	8,991

B.—Pathological Examinations—continued.

	Number of Examinations. (Comparative Statement.)	
	1932.	1933.
Brought forward	56,972	66,143
3. Of Tissues--		
Malignant tumours	581	531
Tubercular	11	22
Other conditions	1,430	1,505
	2,022	2,053
C.—Examination of Parasites.		
Ecto-parasites (fleas, ticks, etc.)	1	2
Endo-parasites (round and flat worms)	11	10
Protozoa	1	9
Insects (including flies and mosquitoes) and spiders ...	10	7
	23	28
D.—Medico-Legal Examinations.		
Examination of Exhibits for—		
Blood stains	16	9
Gonococci	13	12
Seminal stains	30	34
Spermatozoa	23	28
Other examinations	3	3
Poison tests	2	.....
	87	86
E.—Examination of Specimens for Preparation of Vaccines.		
Preparation of Autogenous Vaccines from sputa, urine, acne pustules, boils, wounds and other septic conditions	884	836
	884	836
Total	59,988	69,151

ROUTINE EXAMINATION OF RATS FOR THE PRESENCE OF PLAGUE.

TABLE showing the Number and Species of Rodents Examined in Sydney and Newcastle each month during the year ended 31st December, 1933.

Month.	Sydney.				Newcastle.			
	<i>R.R. Rattus.</i>	<i>Rattus Norvegicus.</i>	<i>M. Musculus.</i>	Total.	<i>R.R. Rattus.</i>	<i>Rattus Norvegicus.</i>	<i>M. Musculus.</i>	Total.
1933.								
January	172	41	10	223	54	6	...	60
February	178	13	6	197	51	1	1	53
March	246	43	50	339	33	...	3	36
April	141	10	10	161	33	...	2	35
May	258	77	36	371	13	...	1	14
June	232	59	26	317	16	1	2	19
July	185	66	28	279	11	...	7	18
August	317	47	24	388	22	...	1	23
September	235	75	43	353	15	...	2	17
October	336	60	103	499	36	...	2	38
November	373	86	188	647	38	...	1	39
December	174	80	4	258	38	...	1	39
Total	2,847	657	528	4,032	360	8	23	391

PART II.

INVESTIGATIONAL WORK, 1933.

Post-operative Tetanus in New South Wales during the Years 1930-1933.

(E. L. MORGAN.)

IN September, 1932, a country hospital in New South Wales informed the Health Department that two cases of post-operative tetanus had occurred in the hospital.

Inquiry elicited the following information:—

First Case.—M.P., female, aet. 33. An operation consisting of a double salpingectomy, appendicectomy, removal of one ovary and a curettage was carried out on the 15th September at 3 p.m. The incision employed was a median incision about 6 inches in length. The ovary was cystic, and the appendix was bound down by adhesions.

Subsequent to operation there was a slight rise of temperature on 16th, 17th and 18th September, the maximum being 99.6 deg. F. The pulse rate varied from 80 to 98.

The patient's temperature then remained normal till the seventh day, 22nd September, when it rose to 99.4 deg. F., with a pulse rate of 88 and a respiration rate of 20, and she complained of stiffness of the jaws.

Tetanic spasms supervened the following day, and the patient died at 8 a.m. on 24th September.

After tetanus had developed, careful examination of the patient revealed no wounds other than the operation wounds, which appeared to be quite healthy, nor could any history of recent injury be obtained.

The suture materials used during the operation consisted of catgut, (sizes 0, 1, 2 and 3), fine and medium silk, with silkworm gut for the skin incision. It was estimated by the surgeon that about 10 feet of catgut was embedded in the patient during the operation.

Second Case.—V.M., female, aet. 7. Was operated on at 11 a.m. on 15th September for subacute appendicitis, and the appendix was removed through the usual gridiron incision. Following the operation there was a slight daily rise of temperature for four days, the maximum being 99.6 deg. F., with a pulse rate of 84-86. The temperature then remained normal till the morning of the 26th September, when it rose to 101.2 deg. F., and the patient complained of stiffness of the jaws. Tetanic spasms occurred during the 27th September, and the patient died on 28th September. At that time her abdominal wound appeared normal and had practically healed. The patient denied any recent injury, and careful examination revealed no abrasions or recent scars.

The suture material used during the operation consisted of catgut, sizes 1 and 2; the purse string suture was of silk, and the skin incision was closed with silkworm gut. The surgeon estimated that not more than 3 feet of catgut was embedded in the patient during the operation.

A post-mortem examination was carried out on this patient some three hours after death. Aseptic precautions, similar to those adopted in an operation, were observed as far as possible, and that portion of the abdominal wall bearing the whole of the operation scar and the stump of the appendix were removed and placed in sterile containers for further examination. The spleen, kidneys, liver, small intestine, and lungs showed slight congestion, and there was a little clear, straw-coloured fluid in the pericardial sac. The vessels of the brain were congested, and the fluid in the ventricles was tinged with blood.

In considering the source of the disease attention was given to the following possibilities:—

- (a) Transference of the disease from one case to the other.
- (b) The arising of both cases from tetanus bacilli lodged in the intestine of the patients or in wounds which may have existed before their admission to hospital.
- (c) Infection of both cases occurring in the operating theatre.

(a) *Transference of the disease from one case to the other.*—This happening could only occur either during the operations, that is, in the theatre, or during the subsequent nursing. The operations were both performed by the one doctor in the same theatre. The theatre sister was common to both cases, but the assisting nurse in each operation was a different nurse. The theatre sister had charge of the instruments and sutures. Owing to the fact that one patient was operated on in the morning and the other in the afternoon, the theatre was completely cleaned in the interval between operations. The surgeon and theatre sister both had a complete change of gowns, gloves, masks and head coverings. Those used in the first operation had been put aside, the custom being to clean and sterilise all material used during one day at one time. Similarly, the sponges used in the first operation were not used in the second operation. Gauze, dressings and sponges were sterilised by steam under pressure. After the first operation the instruments, with the exception of the knives, were boiled for twenty minutes, and again boiled for twenty minutes before the second operation. The knives were thoroughly washed and then kept in pure lysol, and though this disinfectant has been shown to be inefficient in destroying tetanus spores⁽¹⁾, the surgeon is definite that he used a different knife at each operation.

The suture material in both operations was taken from the one container, a point which will be dealt with later under heading (c).

The patients were nursed in different wards, though the same sister was in charge of each case. Both patients were given hypodermic injections following operation (V.M., on injection, and M.P., several injections), and the same syringe was used, though it is probable that the hypodermic needles differed. The needles and syringes were sterilised with alcohol, and, though this method of sterilisation would not serve to destroy tetanus spores, it is difficult to imagine any reasonable means whereby the syringe or needles could become infected with tetanus spores and be responsible for the transference of the disease.

In both cases the dressings were not removed from the operation wounds till tetanus had become established. Thus, it did not appear likely that, through faulty technique, one case was infected from the other during operation, and apart from the hypodermic injection there appeared to be no possibility of transference of the disease from one case to the other during the subsequent nursing.

(b) *The arising of both cases from tetanus bacilli lodged in the intestine or in wounds which may have existed before admission of the patients to hospital.*—Careful examination of both patients showed no sign of recent wounds, and both patients had no recollection of any recent injuries. It must be admitted, however, that a wound, so small that it may escape notice, may prove to be the source of tetanus. Also, it is theoretically possible that the source of tetanus might be bacilli lodged in the bowel of the patient. In fact, the surgeon considered that this was the most likely source of infection in the first case, so that he had no hesitation in issuing a death certificate. It does not appear that such a mode of infection can be excluded when the known facts about tetanus bacilli infections are taken into consideration.

(c) *Infection of both cases occurring in the operating theatre.*—A suggestion was made that the cases may have arisen by dust falling in the wounds from the ceiling of the operating theatre, perhaps with condensed steam. That two cases should occur in such a manner, even if theoretically possible, appears most unlikely. The operating theatre was ventilated by doors, windows, and a central ventilator in the ceiling to allow for the escape of hot air. The windows were opened in the summer, but not in the winter, and, at the time the cases occurred, had not been opened for some months. The operating theatre was situated on the summit of a hill, some fifty yards from a main road, from which it was separated by the isolation block and treed land. At its nearest point to the hospital the road passed through a cutting. During the whole month there had been an exceptionally heavy rainfall, which would largely free the air from dust. No building operations, such as would raise dust, had been carried out in the vicinity of the theatre. The walls and floors of the theatre are regularly washed down with carbolic acid.

Gowns, gloves, instruments, etc., have already been dealt with under the heading "Transference of the Disease from one case to the other."

There remains for consideration the suture material used during the operations. This consisted of silkworm gut, silk, and catgut. Silkworm gut is practically non-absorbent, was sterilised by boiling, and was only used for the skin incision. Silk was used for the purse string suture round the stump of the appendix. The amount used was not more than a few inches, and prior to use the silk was boiled and then kept in 1/500 alcoholic solution of biniodide of mercury. The treatment of both these materials should have effectively sterilised them. Catgut, (sizes 0, 1, 2 and 3), was used in the operation on M.P., and sizes 1 and 2 in the operation on V.M.

The catgut was of a well-known brand, and was purchased in small envelopes of grease-proof paper, from which it was taken and wound on spools. These were placed in ether for twenty-four hours and then in a freshly sterilised jar containing a 1/250 alcoholic solution of biniodide of mercury for three weeks. They were then removed to another sterilised jar, containing alcoholic biniodide of mercury 1/500 and kept there for a further three weeks. The catgut was then placed in a small jar containing a similar solution, from which it was used as required, being removed by the theatre sister by means of sterile forceps.

The work of Mackie⁽¹⁾ and Bulloch, Lampitt and Bushill⁽²⁾ has definitely shown that this method of treating catgut does not produce effective sterilisation, so all patients on whom this catgut had been used were immediately given prophylactic injections of anti-tetanic serum, and all syringes, instruments and trays were subjected to sterilisation by prolonged boiling.

The spools of catgut, (sizes 0, 1, and 3), were removed from the hospital to be examined for sterility. None of size 2 was left. Pending the result of this examination the hospital catgut was replaced by supplies of catgut of known sterility.

In addition to the post-mortem material from V.M., the spools of catgut, dressings, sponges and gauze were also subjected to bacteriological examination. The dressings and gauze proved to be sterile, but cultures from the sponges yielded about four colonies per c.c. of an organism of the *B. subtilis* group. The three sizes of catgut, 0, 1 and 3, all yielded growth. The majority of the organisms grown were aerobic, and consisted of at least two varieties of *B. subtilis* group of organisms. In two instances anaerobic culture yielded a growth of terminal sporing bacilli, not in pure culture, morphologically resembling *B. tetanus*. A similar organism was grown from two cultures of the minced appendix wound. These organisms failed to produce tetanus on guinea-pig inoculation, and were subjected to further prolonged investigation by Professor H. D. Wright⁽³⁾ who has submitted his findings to the *Journal of Pathology and Bacteriology* for publication.

It is to be regretted that none of catgut size 2 was available, as this size of catgut apparently from the same spool, was used in both cases.

Third Case.—In November, 1932, a further case of post-operative tetanus occurred in a suburban hospital. The history was as follows:—M.S., female, married, aet. 38, admitted on 8th November and subjected to operation on 10th November between the hours of 8 and 11 a.m. The operation consisted of amputation of cervix, partial double cophorectomy, ventro-suspension, anterior colporrhaphy and posterior colpo-perineorrhaphy. Following operation there was a daily rise of temperature to about 100 deg. F., with a pulse rate varying from 76 to 96 for the following eight days, and on the morning of the eighth day, the 17th November, the patient developed trismus. Tetanic spasms were present on the 19th, but were controlled with avertin and chloroform. Death occurred on 22nd November. No abnormality was observed in any of the wounds, and no history of injury was obtained.

In this case the suture material consisted of catgut, sizes 1, 2 and 3, chromic gut, sizes 1 and 2, and silkworm gut for the skin incision. It was estimated by the Superintendent of the Hospital that 10 feet or more of gut was embedded in the patient.

General inquiries along the lines adopted in the first hospital yielded no results, save in the case of the catgut.

It was found that the same brand of catgut treated with an alcoholic solution of biniodide of mercury was again in use. Bacteriological examination showed that the biniodide treatment had not rendered the gut sterile, and again a terminal sporing bacillus resembling that found on the former occasion was grown from one sample of the gut.

All public hospitals were now circularised, and it was found that other definite cases of post-operative tetanus in which the source of infection was unexplained had occurred in other hospitals in the years 1930 and 1931. One of these cases (A.B.) occurred in the same hospital as the third case (M.S.) reported above. The details of these cases obtained from the hospital records or the surgeon's notes are given below.

Fourth Case.—A.B., a married woman, aet. 47. Operation on 17th July, 1930. Appendicectomy and total hysterectomy. Following operation the temperature showed daily fluctuations from 99 deg. to 101 deg. F., with a pulse rate varying from 100–120. The stitches were removed from the wound on the tenth day after the operation, when the wound gaped and discharged serum freely. The hospital report states that no tetanus bacilli were found in smears of the serous discharge. The same day the patient complained of stiffness of the jaws and back of the neck, and experienced difficulty in swallowing. Later in the day severe tetanic spasms supervened, and the patient died four days later.

Fifth Case.—E.B., male, aet. 19. Appendicectomy on 16th October, 1931. Following operation the temperature fluctuated daily from 98 deg. to 100·8 deg. F. Six days after the operation the wound was probed and there was a serous discharge. The following day the patient developed symptoms of tetanus, commencing with pain in the back of the neck, head retraction, and spasm of the jaw muscles. He died two days later.

The same brand of raw catgut was in use at the three hospitals where the five cases of post-operative tetanus occurred, and in each instance biniodide of mercury was the agent used in the preparation of the catgut for surgical use.

These five cases appeared to be the only cases of post-operative tetanus since 1930, and created a strong suspicion against the brand of catgut in use at all the hospitals concerned, especially as the method adopted for procuring sterility of the catgut had been shown to be inadequate, and catgut was the only common factor in each of the cases. Further inquiry has demonstrated that such a conclusion on these grounds only was unjustifiable. The Government Statistician was asked for a return of all deaths from tetanus during the period under review, and by this means two other cases of post-operative tetanus were located, involving two other different brands of catgut.

Sixth Case.—K.L., female, aet. 11, contracted tetanus after operation for appendicectomy on 9th April, 1931, and died sixteen days after the operation. The hospital catgut, which had been treated with biniodide of mercury to effect sterility, was examined bacteriologically and aerobic sporing bacilli were grown on culture. Tetanus bacilli were not isolated.

Seventh Case.—M.E.T., female, aet. 44, died on 30th September, 1930, following hysterectomy. The operation was performed in a private hospital, and the patient was only admitted to a public hospital when tetanus had already become established. The operation had been performed about three weeks before the onset of tetanus. In this case the catgut had been prepared by an iodine method, though it does not appear to have been examined for sterility.

Subsequently two further cases of post-operative tetanus occurred—one in November, 1933, and the second in January, 1934.

Eighth Case.—A.M., female, aet. 20. On 20th November, 1933, hysterectomy was performed at a private hospital. On the 24th, 25th and 26th November the patient's evening temperature rose to 100·4 deg. F., and on the morning of the 27th November she complained of a sore throat and that she could not eat her breakfast because her jaws were stiff. At 4·30 p.m. there were spasms of the jaw and neck muscles, the jaws were clenched and the tongue was bitten. The same evening she was removed to a public hospital, where she died of tetanus the following day. She was stated to have had a wound on her finger some time before the operation, but this had apparently healed.

A post-mortem examination was held on this patient, and the whole of the wound areas of the abdominal wall and the pelvis were removed for bacteriological examination. Extensive haemorrhage was present in all the layers of the abdominal wall, and there was a large haematoma towards the lower end of the wound. Internally, a row of stitching extended across the floor of the pelvis from one ovary to the site of the other ovary, which had apparently been removed. Tags of uterine cervical tissue were present in the centre of the wound, and extensive subperitoneal haemorrhage was present all along the incision. Tetanus bacilli were isolated from that portion of the pelvic wound which included the ovary and the adjacent portions of the broad ligament.

One culture was made from the faeces present in the rectum, but tetanus bacilli were not found in this culture. It is to be regretted that in cases of this nature such enormous masses of material are submitted, that it is not possible to make an extensive examination of the intestinal contents for tetanus bacilli.

The catgut used in this case was the same brand as that used in Case 6, and had been subjected to the action of biniodide of mercury in order to procure sterility. Nine spools were submitted for bacteriological examination. None were sterile, but tetanus bacilli were not isolated from any of the spools. Some of the catgut from each spool had previously been used during operations on other patients.

Case 9.—J.D., female, aet. 42. On 27th December, 1933, operation was performed for the purpose of freeing many adhesions which followed a previous cholecystectomy operation which had been carried out about one year previously. In addition to freeing the adhesions the old right paramedian abdominal scar was excised. There was slight pyrexia for two days following the operation. There was no drainage from the tube, which was removed on 29th December, 1933. Icterus persisted and bile remained in the urine. On 1st January, 1934, and 2nd January, 1934, there was one temperature record of 99 deg. F. On 2nd January, 1934, the patient complained of slight stiffness in the right jaw. On the morning of 3rd January, 1934, she complained of not feeling well, of great stiffness of neck muscles and inability to open the jaws. She also stated that she had great difficulty in swallowing fluids, and food had a tendency to go "the wrong way." On examination the temperature was normal; there was tonic contraction of the masseters, sterno-mastoid and muscles at the back of the neck with considerable neck rigidity. The mouth could not be opened more than 1 cm. The other musculature was unaffected. There had been no spasms nor clonic contractions. Both ears showed chronic external otitis. After consultation the diagnosis of tetanus was made and antitoxin treatment instituted. During the late afternoon she had two seizures, during which the legs and arms were drawn up and the face contorted. The seizures were accompanied by cyanosis. At 5 p.m. she became drowsy and on being roused complained of frontal headache. She died at 6.40 p.m.

A post-mortem examination was made on 11th January, 1934. No superficial wound was found. Cultures for tetanus bacilli were made from the following material:—The abdominal wall containing the operation wound and sutures, portion of the sutured meso-colon, omentum adherent to the transverse colon and containing sutures, tissue from the gall bladder region, and portion of the large bowel for examination of the faecal content. Tetanus bacilli were not grown from any of the post-mortem material. The hospital catgut used on this patient had been treated with aqueous iodine to ensure its sterility. Separate cultures were made from eleven spools of the catgut—two whole spools and portions of catgut about five feet in length cut from the remaining nine spools. From one of the portions about five feet in length a growth of a sporing aerobic organism of the *B. subtilis* group was obtained. All other cultures proved sterile. Owing to the conditions under which the cultures had of necessity to be made, the possibility of contamination of the media during manipulation could not be excluded and the bacteriological tests suggest that the catgut had been efficiently sterilised. The possibility of contamination of the culture media was definitely shown in this case. A mould was grown on one test tube of uninoculated culture medium which had merely been poured from a bulk container into the test tube in a manner similar to that which it was found necessary to adopt in making cultures from the catgut.

Summary.—The occurrence of post-operative tetanus has been thoroughly discussed by Bulloch, Lampitt and Bushill, so that I will here merely summarise the main points in connection with the above nine cases.

1. Nine cases of post-operative tetanus occurring in New South Wales in seven different hospitals are here recorded. All nine cases followed abdominal operations.
2. There was no common factor connecting the hospitals, which were often several hundred miles apart.
3. Cultures were made from tissues of the patients in four of these cases, but in only one case were tetanus bacilli recovered. In this one case (Case 8) tetanus bacilli were recovered from the operation area. They were isolated with such ease as to suggest that in cases where they were not found there is the probability that the bacilli were not present in the wound tissues. In the case of V.M. (second case) the patient was only a child. The post-mortem examination was made three hours after death, and the whole surgical area involved in a simple appendicectomy was minced up and cultured. Repeated, almost daily, examinations of the cultures for a period of at least two months failed to disclose the presence of tetanus bacilli in the wound area.
4. Five different brands of catgut were used in the nine operations.
5. In seven instances biniodide of mercury was relied on to effect sterility of the catgut. Culture tests confirmed the findings of other investigators as to its ineffectiveness.
6. In two instances aqueous iodine was used for sterilization of the catgut. In only one of these cases were check sterility cultures carried out, and they tended to support the view that catgut can be effectively sterilised by this method.
7. In two cases attempts were made to recover tetanus bacilli from the intestinal contents. The attempts were unsuccessful, but, as has already been pointed out, thorough investigation along these lines is rendered extremely difficult in view of the enormous amount of other material which is submitted for bacteriological investigation.

The view of the Department on the use of catgut is as follows:—"There is no generally accepted method for sterilization of catgut, but the British Medical Research Council recommends the use of iodine as an effective method for this purpose. Before catgut, which has been sterilised by iodine, is used for operations it should be tested for sterility by a competent bacteriologist.

The Catgut Regulations under the Therapeutic Substances Act (Great Britain) outline the method whereby catgut must be tested for sterility in approved laboratories.

If testing catgut for sterility on a large scale were required (*e.g.*, for all the catgut needed by public hospitals in the State) adequate facilities are not at present available.

Although catgut has not been definitely proved as the source of post-operative tetanus, it is a potential source of this disease, and consequently only catgut in glass or similar containers, prepared in conformity with the Therapeutic Substances Act (Great Britain) should be accepted for use, except where the iodine or other equally effective method of sterilization is carried out locally under properly controlled conditions as outlined above, *e.g.*, at large metropolitan hospitals.

As regards catgut manufactured elsewhere than in Great Britain, it should only be accepted if accompanied by equally satisfactory evidence as to its sterility.

(1). T. J. Mackie.—An Inquiry into Post-operative Tetanus. A Report to the Scottish Board of Health, 1928, 36.
 (2). Bulloch, Lampitt and Bushill.—The Preparation of Catgut for Surgical Use. Med. Res. Council Special Report Series, No. 138, 1929.
 (3). Morgan and Wright.—J. Path and Bact., V. 39, 1934, 457.

SUPPLEMENT

PART I.*

BRIEF HISTORICAL REVIEW OF HEALTH PROBLEMS AND SANITARY PROGRESS IN NEW SOUTH WALES, WITH ESPECIAL REFERENCE TO THE PERIOD 1898-1933.

In an article on the "Evolution of Public Health Administration in Australia,"† published in 1932, the story was divided into five periods, of which the first was concerned with the years 1788 to 1850, and the second those of 1850 to 1885.

In the sanitary history of New South Wales the years 1870 to 1890 are of special interest. During those years the population increased from 498,659 (1870) to 1,121,860 (1890). Yearly arrivals from Europe ranged from 4,000 to as high as 27,000; and there was in addition a large influx of Asiatics. The baneful effects of overcrowding early became manifest in Sydney, which had always been handicapped by its meagre water supply; its deplorably defective sewerage, and the absence of any organised or adequate sanitary service. In the city itself the death rate rose from 22 per 1,000 in 1872 to 29 per 1,000 in 1875; and in the suburbs during the same period, from 14 per 1,000 to 23 per 1,000.

It is an axiom that the true key to sanitary progress in cities is water supply and sewerage. It may not be generally realised that for a hundred years the sanitary progress of Sydney was heavily handicapped by a grossly inadequate water supply and the absence of a sewerage system; the reasons for these conditions were that there is no fresh water river in the neighbourhood of Sydney; and that Sydney is built for the most part on a formation of solid sandstone rock. Dr. Cumpston (1) has recorded that the "first legal order relating to public health in Australia" was issued on 22nd October, 1795, in connection with pollution of the Tank Stream—a small rivulet fed by a swamp of 178 acres which occupied a position in the centre of Sydney, now bounded by King, Park, George and Elizabeth streets. Even as early as 1789 water had to be carted from swampy areas at Rushcutter and Blackwattle Bays to supplement the meagre supply from the Tank Stream. (2) Except for an occasional year of abundant rainfall the following report issued in June, 1825, would apply to practically any period in the first 100 years of Sydney's settlement. "Sydney is at present dependent for water on the tanks constructed near the lumber yard, or private wells, and on the swamps and lagoons near town, from which it is brought in barrels at great expense." In 1826 the position was so desperate that a 12,000 feet tunnel, known as "Busby's Bore" 4 feet wide and about 5 feet deep was cut by convict labour from Hyde Park to the "Lachlan Swamp" a low lying area in what is now Centennial Park, which had a catchment area of about 2 square miles. "Busby's Bore" was completed in 1830, and in favourable seasons provided a fair supply" for the 20,000 persons that then constituted Sydney's population; but in years of scanty rainfall great hardships were experienced from the scarcity of water. So great was the shortage about 1850, when the population had risen to 80,000, that a succession of commissions and boards of inquiry were appointed. In 1852 a recommendation was adopted to utilize the waters in the swamps around Botany and pump them to a reservoir at Paddington. Sydney had been incorporated as a city in 1842; but in 1854 the residents were so dissatisfied with the progress the council was making in giving effect to the pumping scheme, that the council was dissolved, and the city placed under three commissioners specially empowered to provide a water supply and to carry out a scheme of sewerage. Pumps from abroad were obtained by these commissioners, and from November, 1858, to 1888 the main water supply of Sydney was obtained from the Botany swamps.

At its inception the Botany scheme was known to be a temporary expedient, and a Royal Commission was appointed to devise a permanent water supply. In 1869 this Commission recommended adoption of what was known as the Upper Nepean scheme. This scheme was planned to intercept the drainage of 350 square miles of country lying at the head of the Nepean, Cordeaux and Cataract Rivers, and to convey the impounded water to Sydney by an extensive system of pipes and tunnels. Work on the scheme was commenced in 1880, and in 1888 water from this source was supplied to Sydney; the supply has had to be supplemented from time to time by construction of large impounding dams in order to cope with the needs of Sydney's expanding population.

SEWERAGE.

During the period 1854-1857 (while Sydney was under control of three specially appointed commissioners) a system of sewerage was initiated designed to remove both sewage and surface drainage; these drains and sewers all discharged directly into the harbour and comprised five main outfalls at Blackwattle Bay, Darling Harbour, Sydney Cove, Fort Macquarie and Woolloomooloo Bay. (3) With the increase of population, gross pollution of the harbour occurred, and the Sewage and Health Board of 1875 were specially commissioned to report upon the "best means of disposing of the sewage of the City of Sydney and its suburbs as well as of protecting the health of the inhabitants thereof." A design was adopted by which all the sewage of Sydney is conveyed to deep ocean outfalls.

Work on the scheme began in 1880, and was concluded in 1903 so far as the areas originally designed to be served were concerned. The work as planned has since been considerably extended, and at a survey made in 1930 there were 200,320 sewered and 67,181 unsewered dwellings in the Sydney metropolitan area. A considerable amount of loan money is being devoted during the present depression period to further sewerage extensions with the double purpose of providing employment and improving sanitation.

The sewerage of Newcastle from 1907 onwards has been carried out under charge of the Hunter River District Water and Sewerage Board. In country districts opposition to proposed extensions was not uncommon notwithstanding a high typhoid incidence, and in some cases an ample water supply—probably from a fear of increased rates. Narrandera (1900) was the first inland country town to be sewered; at the end of 1933 sewerage systems had been installed in seventeen of the larger country towns; and work was in progress at nine other towns. In many places, Broken Hill, for example, deficient water supplies are a bar to such provision and the use of septic tanks is encouraged.

* A brief Report on the Public Health Laboratories and State Hospitals and Homes will be included in the Annual Report for 1934.

† J. H. L. Cumpston, Med. J. Aus. V. 1, 1932, 194.

A septic tank was first installed in New South Wales in 1902; in 1905 there were 187, and a code of by-laws (now an Ordinance under the Local Government Act) was issued for their control. Hotel licensing authorities favour provision of septic tanks on hotel premises in country towns where sewers are not available.

Typhoid Epidemics.—In April, 1875, in consequence of the excessive mortality from typhoid fever, the Government appointed "The Sydney City and Suburban Sewage and Health Board" (4) "To enquire into and report as to the best means of disposing of the sewage of the City of Sydney and its Suburbs, as well as of protecting the health of the Inhabitants thereof."

There were in all fifteen members appointed to this Board, among whom were university professors, engineers, surveyors, chemists, and three medical men—Dr. Haynes Gibbes Alleyne, Port Health Officer, Dr. G. F. Dansey, City Council Health Officer, and Dr. R. B. Read. Within three weeks of its appointment this Board issued its first report, its investigations having disclosed that "four-fifths of the water closets are liable to be directly connected with the mains, and that the contents of the closet-pans were drawn into the pipes supplying the inhabitants with water." As a result of this first report Parliament immediately passed the "Water Pollution Prevention Act" empowering the City Engineer to cut off all direct connections. At the same time, on the Board's recommendation, Parliament passed the "Nuisances Prevention Act" of 1875, requiring the council of every municipality to undertake the duty of emptying cesspits and other similar receptacles by means of their own plant and appliances, and under the inspection of their own officers. Under this Act municipalities were required to employ an Inspector of Nuisances.

In its 12th and final report, issued in May, 1877, (5) the Sewage and Health Board specially stressed upon the Government the necessity for the passing of a Building Act "to remedy the grossly insanitary effects of overcrowding" which it fully set out in its 11th report; (6) and also the appointment of a Central Board of Health to which could be entrusted the enforcement of all sanitary laws. No immediate effect was given to these recommendations, but the "City of Sydney Improvement Act" and the "Sydney Corporation Act" passed respectively in June and July, 1879, were doubtless the direct outcome of the disclosures contained in the series of reports issued by this Board.

Any effective sanitation through all this period was handicapped by the absence of any organised medical or health service. Apart from the Port Health Officer, and a Health Officer employed by the City Council, there does not appear to have been any official in town or country concerned with public health.

That "Panic is the parent of Sanitation" was well exemplified in Sydney in May, 1881, when a Board of Health was brought into existence as a consequence of a small-pox epidemic that then invaded Sydney, of which the origin was not traced. During the first months of the outbreak the Port Health Officer, Dr. Alleyne had the sole responsibility of dealing with cases. But in July, when several cases were reported from widely separated parts of the city and suburbs, the Government was called upon for immediate action. A "Board of Advice" was appointed composed of four public officers and six medical men. In December, 1881, an "Infectious Diseases Supervision Act" was passed, under which the Board of Advice was constituted a permanent Board of Health. The small-pox epidemic lasted from May, 1881, until February, 1882, during which period there were 154 cases and 40 deaths. (7)

Among the major health questions that immediately confronted the Board were the frequent arrivals of small-pox infected ships; compulsory vaccination; prevalence of typhoid fever; and shortage of hospital beds. To meet this latter emergency the "Sanitary Camp," established at Little Bay to house small-pox contacts, was utilised for convalescing typhoid patients: this "camp" subsequently developed into the Coast (now the Prince Henry) Hospital with accommodation for upwards of 1,000 patients.

In 1884 a further outbreak of small-pox occurred in Sydney. This outbreak was investigated by Dr. Ashburton Thompson, an outstanding figure in Australian Public Health progress, who from then onwards was for a period of 29 years intimately associated with public health work in New South Wales. Dr. Thompson, whose work for the public health in Australia is ably recorded by Dr. W. G. Armstrong, (8) had come to Australia a couple of years previously to recuperate after a breakdown in health. Early in 1884 he investigated an outbreak of Dengue Fever for the Queensland Government, and in August joined the New South Wales Department, in a temporary capacity, to investigate the small-pox outbreak in Sydney.

As a consequence of this outbreak, the Australasian Sanitary Conference (9) met in Sydney in September, 1884, under the chairmanship of the then President of the New South Wales Board of Health, Sir Charles K. Mackellar. Dr. Thompson was appointed as Secretary to the Conference, and also as a special delegate for New South Wales. A system of federal quarantine was adopted by the Conference which worked smoothly and efficiently until the responsibility of overseas quarantine passed from the States to the Commonwealth by the resolution adopted at the Premiers' Conference in August, 1909.

When Dr. Ashburton Thompson joined the Department in 1884, there was no organised medical service, and no administrative duties beyond those entailed under the Infectious Diseases (Small-pox) Supervision Act of 1881. In 1885 Dr. Thompson was appointed Medical Inspector and Deputy Medical Adviser to the Government, and was the first permanent medical officer of the Board of Health; the successive Presidents of the Board were part-time officers only until July, 1896, when Dr. Ashburton Thompson was appointed the first permanent head of the Health Department.

Dairies Supervision Act, 1886.—This Act was passed as the result of a report presented to Parliament in May, 1886, (10) on an extensive outbreak of typhoid fever among the customers of a dairy in the Leichhardt Municipality. In investigating the conditions at this dairy Dr. Ashburton Thompson found that the "well supplying water to the premises was not only fed by sewage from the surrounding houses, but also by drainage from two neighbouring cemeteries." The passing of this Act was the foundation of organised public health work in New South Wales. It vested in the Board of Health wide powers of supervision over dairies and dairy cattle; and required a trained staff of inspectors to carry out its provisions.

In March, 1892, the "Diseased Animals and Meat Act" was passed and placed under the Board's control; this was followed in 1894 by the Noxious Trades and Cattle Slaughtering Act, under Part II of which the Board of Health was incorporated. This Act also placed the entire management and control of the Glebe Island Abattoir under the Board.

Prior to 1896 the President of the Board of Health and Chief Medical Officer of the Government was not an officer of the public service, and his time was only partly available to the Government. In 1895 a commission appointed to reorganise the Public Service decided that the growing importance of the Health Department required the appointment of a full-time officer. Dr. Ashburton Thompson was chosen for the position, and took full charge of the Department in July, 1896. From that time onward there has been steady and continuous progress in public health development; although many years of strenuous work were required to make up the leeway of New South Wales in sanitary administration in comparison with other Australian colonies, in all of which comprehensive public health Acts had been in force for many years (see footnote, p. 1).

When Dr. Ashburton Thompson assumed control, New South Wales was still without a Public Health Act. A draft Bill had been prepared and introduced into the Legislative Council by Sir Charles Mackellar in 1885, where it was read a first time. Owing to a change of Government no further action was taken with the Bill as a whole, Part IX, however, became law as an emergency measure under the title of the Dairies Supervision Act, 1886.

Dr. Ashburton Thompson was an indefatigable worker, and immediately pressed for legislative power to remedy the grossly insanitary conditions then so much in evidence, but against which he could take no effective action. In November, 1896, he secured passage of a Public Health Act,* which for the first time gave New South Wales health officials statutory powers over insanitary conditions. The Act conferred extensive powers on municipal councils for preventing spread of infectious diseases; abolishing nuisances; closing insanitary dwellings; closing dangerous sources of water supply; proceeding against vendors of unwholesome and adulterated foods, etc. The notification provisions of the Act covering infectious diseases were brought into operation on 1st January, 1898, and a return on p. 46 of this Report gives the yearly number of cases of infectious disease notified from 1st January, 1898, to 31st December, 1933.

The constantly increasing duties imposed on the Board of Health made it impossible to any longer house its staff in the terrace house at 127 Macquarie-street, which it had rented for many years; and the building at the corner of Macquarie and Albert streets still occupied by it, was erected and utilised from September, 1897. This building has for many years been too small for the Departmental staffs, and provision of a more commodious building is an urgent necessity.

Section 10 of the Public Health Act provided for the appointment of Medical Officers of Health. As a beginning it was decided to combine two groups of districts — Metropolitan and Hunter River — which between them contained about 40 per cent. of the then population of New South Wales. Drs. W. G. Armstrong and Robert Dick were selected as the medical officers and took charge of their respective districts on 1st April, 1898, to Dr. Armstrong being allotted the post of Medical Officer of Health for the Metropolitan Combined Sanitary District, and to Dr. Dick the post of Medical Officer of Health for the Hunter River Combined Sanitary District. Medical officers of health occupy a purely municipal position, and though their duties are not specifically prescribed they comprise those normally allotted to whole time medical officers of health in other parts of the Empire; for example, they advise the local authorities of their districts on all matters affecting the public health; they must keep themselves informed respecting all influences affecting, or threatening to affect, injuriously the health of their districts; and to enquire into the cause, origin and distribution of disease. They are required to submit an annual report, and to make additional reports to local authorities on any sanitary matters when requested to do so by the local authorities, or without such request if the medical officer of health considers such action advisable. The Public Health Act requires local authorities to furnish to the Board of Health copies of all reports received from the medical officer of health.

An examination of the annual reports issued by Drs. Armstrong and Dick disclose that a very considerable part of their time had to be devoted to organisation of excreta and refuse disposal services, in order to remedy the primitive conditions then so generally existing. The old type of single pail, frequently of large dimensions, was in general use, the contents being emptied into tank carts and removed at night. Even in the Metropolis, in 1898, only four municipalities had adopted the interchangeable pail system; and cesspits were still numerous. In the Hunter River District similar insanitary conditions prevailed; in many districts cesspits were in general use, and one or two areas were using the old form of midden or cesspool. In some of the unincorporated towns privy accommodation had been provided without any supervision, and in many instances more wretched and unsatisfactory arrangements could scarcely have been found in the most primitive communities.

Very considerable improvement in the carrying out of sanitary services was effected from 1902 onwards by passage of a one-page Act which empowered local authorities to instal daylight removal services, provided airtight receptacles were used of a pattern approved by the Board of Health.

Further progress in sanitation was made possible from 1906 onwards by passage of the first Local Government Act, under which all unincorporated areas in the Eastern and Central Divisions of the State came under control of the elected Shire Councils.

House refuse and garbage removal services were frequently not provided, individual householders being left to dispose of waste materials as best they could, and any convenient space was used as a dumping ground. Whenever a common dumping ground had been provided by a council, it was usually in a most unsatisfactory condition, and as settlement extended these "tips" became sources of great nuisance, and of constant complaint. In 1898 there was only one incinerator for garbage destruction in the metropolitan area; at the end of 1902 there were four; there are now seventeen in the metropolis and three in country centres.

* This Act, with slight amendments, was consolidated in 1902, and under the title "Public Health Act, 1902," is still the principal Public Health Act of this State.

Trained Health Inspectors.—For the proper execution of statutes dealing with health administration it was essential for the medical officers of health to be provided with a staff of trained inspectors, of which none were then available. One of the first duties to which Drs. Armstrong and Dick had to devote themselves was the training of the officers employed by the municipalities comprised in their districts under the designation of "inspector of nuisances," but who were in most instances called upon to perform multifarious duties outside the scope of public health. Regular courses of lectures and demonstrations in sanitary law and practice were instituted by the medical officers in their respective districts in 1898 for these officers and examinations for proficiency were held at the end of the year. To overcome the difficulty of trained inspectors, representations were made by the late Dr. Ashburton Thompson to the London Royal Sanitary Institute, and that body instituted examinations in Sydney in 1901. From that date to the end of 1933, 603 persons had obtained certificates as sanitary inspectors, and 76, certificates for proficiency in sanitary science. All other Australian States and New Zealand now hold these examinations.

The earliest New South Wales statutes for suppression of nuisances were police Acts, and the present Police Offences Act still embodies the nuisances prevention sections of the old (Towns) Police Acts (1838–1848).

Under the early Cattle Slaughtering Acts (1834, 1843, 1850, 1851) provision was made for inspectors to prevent nuisance, but the first use of the term "inspector of nuisances" appears in the C.S. Act of 1851. The Nuisances Prevention Act of 1875 required that municipalities should appoint an inspector of nuisances and defined his duties. In the Public Health Act, 1896 (slightly amended and consolidated in 1902) the term "sanitary inspector" is used. The amended Local Government Act of 1919 varied the term to "health inspector," with the proviso that reference in any Act to a sanitary inspector, inspector of nuisances, or a health inspector should be deemed to be a reference to a health inspector.

In 1933 regulations were issued under the Public Health Act requiring employment of certificated inspectors only, with a proviso for protection of present uncertificated occupants of positions, who are carrying out the whole of the sanitary duties of such position to the satisfaction of the Board of Health.

An important provision of the Public Health Act is the power of the Governor to appoint one or more health inspectors approved by the Board of Health to a district where the sanitary duties are not being efficiently carried out by a council, and which has failed for three months to comply with the Board's requirement for such an appointment to be made.

The Public Health Act of 1896 (consolidated, 1902) contained a provision for payment from Consolidated Revenue of a moiety of the salaries of sanitary inspectors in thickly populated districts. In the early years of organisation of health work this power was exercised with excellent effect, as it enabled the Government to insist upon the appointment of a trained inspector in every case where it paid a moiety of the salary. Since the passing of the Local Government Act in 1906 there has been considerable improvement in the financial position of municipal and shire councils, and in 1932 it was considered that the increasingly heavy burden on the State finances occasioned by the payment of such moiety was no longer warranted. Further liability was therefore cancelled by passage of the Public Health Inspectors' Salaries Act, 1932. Careful observation will be maintained over health activities in connection with the cessation of such payments.

Plague Epidemics, 1900–1909.—Epidemics, conflagrations and catastrophic disturbances lead at times to wholesale improvements in housing. In New South Wales, and Sydney in particular, the outbreaks of plague during the period 1900–1909, ^(11, 12) and again in 1921–22, ⁽¹³⁾ did more than any other single event to bring about radical improvements in the insanitary conditions that had prevailed. Local authorities were given increased powers over various forms of nuisances and insanitation. The Sydney Harbour Trust was established with extensive powers over all the wharf areas and the whole of the harbour foreshores. A large and densely populated section of the oldest part of the city, known as the "Rocks area," was also placed under the entire charge of the Harbour Trust. Special work carried out by the Trust in connection with plague was the remodelling of the dangerous sections of the "Rocks area," and the sheathing with concrete of the whole of the sea wall along the wharves.

Sydney's first case of plague (non-fatal) occurred in January, 1900. Warnings were issued by the Health Department of impending danger, and the urgent necessity for rat destruction; but these warnings went unheeded by the public. Towards the end of February and during March there were several fatal cases and immediately public indifference turned to a panic, and drastic reforms in sanitary administration were demanded. A house to house inspection of the infected city areas instituted by the Board of Health with a staff of temporary sanitary inspectors showed that the condition of many of the dwellings was disgracefully bad, from long continued neglect by the local authority; although ample powers over buildings had been conferred upon it by the amending Act of 1879.

These conditions called for urgent action, and arrangements were made whereby the Department of Public Works organised and took charge of cleansing gangs totalling 3,000 workmen, whose work was supervised by 28 sanitary inspectors under the direct charge of the Board of Health's own trained inspector. From March to the end of July, 1900, successive portions of Sydney were closed to traffic and cleansed. No further cases of plague occurred from 9th August, 1900, until a second outbreak began at the end of 1901. During subsequent outbreaks similar action was taken for cleansing infected areas whenever conditions were found that warranted such action.

To prevent similar conditions again arising an amendment was made in the City Corporation Act by which the Government paid half the salaries of sanitary inspectors and assumed in return a veto over their appointment and dismissal. In 1901 a staff of fifteen inspectors was appointed under this provision, and regular house to house inspections were instituted. Precautionary measures against plague were insisted upon by enforcement of rat-impervious floors in all buildings where food stuffs were stored or which were

otherwise liable to infestation by rats, and this general use of concrete for rat-proofing purposes has led to remarkable improvements in sanitation in and around both business premises and dwellings. Use of concrete for road construction has diminished dust, and has helped in preventing nuisance in various ways. Increased use of motor vehicles has reduced horse transport in and around cities by at least 50 per cent., and there has been a corresponding lessening in the fly nuisance with the disappearance of stables and accumulations of horse manure. These no doubt have all been potent factors in the remarkable lessening of the incidence of "summer diarrhoea" and other gastro-intestinal diseases.

In general it may be said that the plague years were the turning point in improved general sanitation throughout New South Wales; and for many years it has been of rare occurrence to find anywhere the grossly insanitary conditions which so commonly prevailed prior to 1900.

Buildings and Building Areas.—Outside the City of Sydney local authorities had no statutory powers over the construction of buildings; and dwellings were often erected in the flimsiest and cheapest way. It not infrequently happened that after successful action had been taken to secure the closure and demolition of old dilapidated and insanitary dwellings the medical officers of health had the disappointing experience of seeing new buildings erected on the same sites which outraged most of the laws of sanitary house construction, and with which local authorities were powerless to interfere until the completed dwelling could be proved to be insanitary from dampness, bad ventilation or other reasons.

Power to remedy these conditions was given in the amended Local Government Act of 1919, and in municipal and shire areas there is now complete control over the erection of all new buildings under a comprehensive Ordinance issued under that Act.

In the last thirty years the modern multifloor or flat buildings have become a marked feature in cities for business or residential purposes, and owing to the great improvement in environmental conditions and the remarkable advance in the building and allied sciences (electricity, ventilation systems, etc.) it is possible for human beings to obtain all the essentials for healthy living in these modern structures. Under the New South Wales regulations, which have been the subject of much careful thought, the relative proportion of the building to the site and height of the building to the open area surrounding it, are defined. An additional important proposed requirement is that a certain amount of balcony space should be provided, —this provision would specially concern infant inmates of these buildings.

Powers to proclaim unhealthy or low lying land unfit for building purposes was given in the original Public Health Act. Proclamation of such areas until certain specified work had been effected has been the means of considerable areas being so improved as to render them in every way suitable for building; and in swampy areas has led to abolition of various forms of nuisance, including that of mosquitoes.

PURE FOOD.

In New South Wales legislation from 1830 until the passing of the Public Health Act in 1896, the only food stuffs (other than meat, which was dealt with in the Cattle Slaughtering Acts) that appear to have been considered worthy of attention were bread, beer and spirituous liquors.

The Bread Act of 1835 prescribed the weight of loaves and the composition of "Standard Wheaten," "Household Wheaten" and "Mixed Bread." The two latter were breads of inferior quality and a fine of 10s. was imposed for every lb. weight of bread sold or exposed for sale without being marked as prescribed.

The Markets Act of 1839 provided for appointment of inspectors of provisions who were empowered to seize and destroy all unwholesome meat, fish or other provisions offered or exposed for sale.

In 1850 the Adulteration of Malt Liquors Act (14 Vic. 16, 4) was passed. The preamble stated "there is reason to believe that certain highly deleterious ingredients are used in the manufacture of malt liquors in the Colony or mixed with them previous to sale, and it is expedient for the preservation of the public health to prevent such nefarious practices"; forfeiture of the liquor and a fine of £200 (for a second offence £500 and imprisonment not exceeding two years) was the penalty for putting into or mixing with beer, ale or porter or the worts thereof any "vitriol, tobacco, opium, aloes, copperas . . . or any other deleterious or poisonous substance."

In 1855 a further Act was passed to prevent the adulteration of spirituous and fermented liquors by mixing with them "any poisonous, deleterious or pernicious substance."

Establishment of a Pure Food Division.—The first general statutory powers over food adulteration in New South Wales were included in Part 8 of the Public Health Act, 1896, and followed closely the provisions in the English Acts of 1875 and 1879. It was found however that local authorities rarely exercised their own powers under the Act of submitting samples for examination; and systematic inspection of the food supply and collection of samples had to be undertaken by departmental officers.

As a result of several years' experience a separate Pure Food Act was passed in 1908; and under this statute very considerable improvements have been effected both in the quality of the food products sold to the public and in the methods of handling and storing foods. During the period it has been in operation upwards of 400,000 specimens have been collected and inspections of premises made; there have been nearly 12,000 prosecutions and approximately £50,000 have been collected in fines and costs. In 1898, 63 per cent. of the milk samples collected were adulterated with added water or preservative; in some instances the added water ranging up to 68 per cent. Of the 19,622 milk samples collected in 1933, the percentage adulterated was 1.46.

Need for uniformity in the Pure Food Laws and Regulations of the Commonwealth became evident in 1909, when considerable divergence was found between the code issued by Victoria in 1905 and the New

South Wales code of 1909. At the Premiers' Conference of 1908 a resolution had been passed that "uniform legislation for standardisation of Australian manufactured food products is desirable," and in furtherance of this resolution an Interstate Departmental Conference on Uniform Standards was held in Sydney in May, 1910, the principal object being to arrive at "standards which would permit of interstate trade, and at the same time protect the consuming public."

As a result of experience with a code of regulations recommended by this Conference, Dr. Ashburton Thompson was in 1912 entrusted with a Royal Commission by each of the six States to make inquiries with the ultimate object of framing a single set of regulations that could be given legal force in all States, and presented his report in December, 1912. A second Conference met in Melbourne in June, 1913, and adopted resolutions to give legislative effect to the Commissioner's recommendations. At the Premiers Conference in 1914 it was resolved, "That . . . uniform standards for foods and drugs should be approved by each State as early as practicable." War delayed action in this, as in many other directions; and many and diverse difficulties had arisen before a third Conference met in Sydney in September, 1922. At that conference the New South Wales Health Department undertook to act as a secretariat in regard to any contemplated changes in the regulations that might cause difficulties in interstate trade; codes of regulations were issued by nearly all the States in 1924-1925; and further codes in the last couple of years, but uniformity still presents many problems for which a satisfactory solution is being sought.

During recent years there have been remarkable improvements both in structural arrangements and equipment of factories and shops in which food stuffs are manufactured and sold. Business people and the public generally have become so much better educated in the principles of hygiene that it is now less difficult for health departments to secure ready compliance with the higher standards considered necessary for protection of food stuffs from contamination; and in the Public Health Amending Acts and Pure Food Act useful legislation has been provided to prevent persons suffering from certain diseases from handling or taking part in the preparation or sale of food.

Meat Inspection.—The earliest Australian enactment dealing with food inspection was the Cattle Slaughtering Act of 1834, and applied to the towns of Sydney, Parramatta, Liverpool, Windsor and Richmond, Bathurst and Maitland. Under it the Governor was empowered to appoint persons to be called "inspectors of slaughterhouses and of cattle intended for slaughter." This Act could be extended by Gazette notice to any other town or district. Sydney, on its incorporation in 1842, was withdrawn from the provisions of the Act.

In 1850 a further Act was passed "To amend the law relating to the slaughtering of sheep, cattle and other animals within certain towns . . . and for prevention and removal of certain nuisances therein." This Act provided for control over noxious trades associated with the disposal of slaughterhouse wastes, etc. A further amendment of 1851 required the immediate destruction of animals dying of disease.

Under the Sydney Abattoir Acts of 1850-1860 the Glebe Island Abattoir was erected.

In 1892 a Diseased Animals and Meat Act gave extensive powers for inspection of animals or meat consigned for sale or being prepared or exposed for sale, and for the destruction of diseased animals and meat.

In 1894 the Noxious Trades (Part I), and Cattle Slaughtering Act (Part II) was passed. Under Part II of this Act the Board of Health was incorporated and placed (against its wish) in sole control of the management and maintenance of the Glebe Island Abattoir, together with the inspection of meat for export. This work was carried out with great success by a special committee of the Board of Health for a period of over twenty years. The new Abattoirs at Homebush Bay were completed in 1915, and placed under the charge of the Board appointed under the Meat Industry Act, 1915; under this Act extensive powers of inspection were reserved to the Board of Health.

Prior to the passing of the Cattle Slaughtering Act of 1894, country slaughterhouses were under no regular supervision, unless (as exceptionally happened) they were within a municipal boundary; but practically all country slaughterhouses were under the jurisdiction of the police, who were the local authorities for unincorporated areas prior to the passing of the Local Government Act of 1906. Under that Act supervision of slaughterhouses became a duty of Shire Councils, except in the unincorporated Western Division of the State.

From 1894 onwards the Board of Health was able to effect very considerable improvements in the conditions under which meat was slaughtered for food in country districts by using its staff of veterinary inspectors under the Dairies Supervision Act, in conjunction with police local authorities.

Until the past two or three years populous country districts have shown a lack of initiative in the provision of abattoirs, Newcastle and Broken Hill being the only centres other than Sydney where such a necessary convenience has been established.

An amendment made to the Cattle Slaughtering Act in 1932 empowers an increase in slaughtering fees on a prescribed scale to recoup councils for expenditure incurred, and in several of the more populous centres in the Hunter River, South Coast and Blue Mountains districts qualified meat inspectors have recently been appointed.

The care given nowadays to the protection of raw meats from contamination and the hygienic requirements in respect of premises where such meat is dealt with contrast very markedly with the unsatisfactory conditions which prevailed thirty years ago. The modern developments in refrigeration have lessened the difficulties associated with the handling of foods such as meat and milk, and the old claim that chemical agents could not be done without for the preservation of these articles can no longer be justified.

CREATION OF NEW DIVISIONS, 1923-1933.

Among the more special developments that have taken place during the period under review are the establishment of sections for maternal and infant welfare, tuberculosis, venereal diseases and industrial hygiene.

Infant Welfare Work.—Perhaps the most effective work in preventive medicine in New South Wales has been that connected with the lowering of the infant death rate from 146.9 per 1,000 in the metropolitan district in 1896, the year the Public Health Act became law, to 36.82 per 1,000 in 1933; and for the whole State from 121.9 per 1,000 in 1896 to 39.35 per 1,000 in 1933.

Infant welfare work in New South Wales was inaugurated by Dr. Armstrong in 1904, when a lady sanitary inspector was appointed to his staff by the City Council. One of the principal duties of this inspector was to visit mothers as soon as possible after a birth had been registered, and to instruct and advise them, especially the younger women, in the feeding of infants; in 1909 a second inspector was appointed to visit mothers in the poorer class suburbs.

An important forward step in infant welfare work was the taking over by Government in August, 1914, of the three Alice Rawson Schools for Mothers at Alexandria, Newtown and Woolloomooloo. These schools, which were in charge of a trained nurse, had been established by private citizens about 1911 under the leadership of Miss Rawson, daughter of the then Governor. The functions carried out were on lines somewhat similar to those of the present Baby Health Centres, one important difference being that sick babies had also been given attention.

From 1914 to 1924 baby welfare work was under the control of the Under Secretary, Chief Secretary's Department, assisted by a committee, and this form of control remained in operation until 1925, when the clinics were handed over to the Department of Public Health and placed under the supervision of Dr. Sydney Morris, who was appointed Director of the Division of Maternal and Baby Welfare.

On 31st December, 1933, 114 baby clinics were in operation, sixty-eight of these were in country districts and forty-six in the city; there were over 514,000 attendances at the clinics during 1933, and 44,728 individual babies received attention.

Keen interest is nowadays taken by the public in baby welfare work. Requests for additional clinics are being constantly received, more particularly from country centres, and Country Women's Organisations are most helpful with assistance in providing accommodation for clinics, equipment, etc., in order to bring about their establishment.

Through the agencies of the Far West Children's Health Organisation it has been possible to extend this useful work beyond the main centres of population, by means of travelling clinics fitted in trains on certain of the long distance lines in the western and north-western areas of the State.

Ante-natal Clinics.—There are now nine ante-natal clinics in the metropolitan area working in conjunction with individual Baby Health Centres. The ante-natal clinics are so distributed through the suburban areas that an expectant mother may visit a clinic without the need of travelling any considerable distance. These clinics are under the immediate control and supervision of a departmental medical officer.

The Royal Society for the Welfare of Mothers and Babies, which established the "Tresillian" Mothercraft Home at Petersham in 1919, and the "Tresillian North" Mothercraft Home at Willoughly in 1929, is an active force in baby welfare improvement. This Society was incorporated by Act of Parliament No. 52 of 1919. The Homes established by it cater for the care of children requiring special dietetic treatment; and at the same time they serve as training schools for the post-graduate training of nurses in baby welfare work. Every nurse employed in a Baby Health Centre controlled by the Department is now required to produce a Tresillian certificate in addition to her general and midwifery nursing certificates.

MATERNAL WELFARE.

Another problem to which the department has given special consideration since 1925 is that of maternal mortality and morbidity. Notwithstanding all the attention that has and is being given in Great Britain, the United States, and continental countries by commissions of inquiry, medical officers and sanitarians, the improvements in midwifery procedures, and the provision of specially equipped maternity hospitals, the maternal mortality rate has remained practically stationary over the last twenty years. During the same period the infant mortality rate under one week, and under one month has—like the maternal mortality rate—remained practically constant, although the infantile mortality rate over one month has so noticeably declined.

In a comprehensive survey of the subject in 1925, Dr. Sydney Morris ⁽¹⁴⁾ wrote:—

"Some 700 mothers in the hey-day of their lives die annually in the Commonwealth as the result of their carrying out the highest and most important natural function. They leave behind them nearly 2,000 motherless children. Each family concerned is robbed of its most cherished guardian, the husband of his confidant and adviser, the new-born babe of its natural source of nourishment and the State of a potential source of population.

"In addition to the actual deaths a far greater number of mothers suffer from invalidity and chronic ill-health as the result of childbirth, and it is extremely probable that this statistically unrecognized morbidity in its ultimate results is much more disastrous than the ascertained mortality.

"The causes of these tragedies are many and varied. They constitute difficult and urgent problems which call aloud for solution and which cannot for long be put aside. They demand analysis and constructive thought. They concern many aspects of our social life and rank in importance with the first social issues of our time."

In this State a fairly complete organization has been brought into operation since 1926 for ante-natal supervision and improvement in maternity practice. At Sydney University a Chair of Obstetrics has been established with increased training for medical students. The Nurses Registration Act came into active operation on 1st January, 1926. The training of midwives has become progressively more intensive; their registration is renewable annually, and the Director of the Maternal and Baby Welfare Division is kept in touch with midwives practising in the metropolitan and country districts through a staff of supervisory nurses who visit them regularly; this staff of supervisory nurses also carries out the inspection of private hospitals. Puerperal infection was made a notifiable disease in 1929, and all notified cases are investigated by a medical officer attached to the division, who also investigates cases of puerperal pyrexia notified to the Nurses Registration Board, if such pyrexia proves to be due to infection of puerperal origin.

Upon the inauguration of this division in 1926 arrangements were made with the Government Statistician for every puerperal (and suspected puerperal) death and every neo-natal death to be notified to the department. In every case a complete history of the patient's pregnancy and labour, as well as her previous health and labours, and other relative information has been obtained and investigated. What is regarded as sufficient data has now been accumulated and a comprehensive report on the findings will be issued in 1935.

One of the principal contributing causes to the maintenance in this State of the high maternal mortality rate is that of deaths due to illegal operations. Commenting upon this in the annual report for 1931-1932 the Director of the Division (Dr. Sydney Morris) points out, "as a still more disturbing fact that the increase as a rule appears to be taking place among married women who are already the mothers of families, rather than among the unmarried single women. Of the forty deaths that occurred in the Sydney metropolitan district in 1931, twenty-five (or two-thirds) were married women, twelve were single, and three widowed or divorced. In 1932 the number of deaths from illegal operations reached a record height of fifty or 18.1 per cent. out of 276 total maternal deaths."

The department now has nine ante-natal clinics in operation, but neither at these ante-natal clinics nor at the ante-natal departments attached to the large maternity hospitals are the attendances sufficiently regular to ensure adequate supervision, although every opportunity is taken to give wide publicity to the facilities that exist and to the need for seeking such supervision. As far as can be estimated not more than twenty per cent. of the expectant mothers in this State receive ante-natal supervision; many are not seen by a doctor until in labour—many not even then.

As pointed out by Dr. Morris in 1925⁽¹⁴⁾ "Ante-natal care and supervision affords a means of controlling much of the present maternal mortality and of eliminating most of the maternal morbidity. Its value is not fully recognized, and until it is we shall not make any marked advance from the present unsatisfactory position."

It will therefore be the earnest purpose of the department to make renewed efforts and to utilise every opportunity for educational propaganda and advice to expectant mothers, in an endeavour to impress upon them the importance of being under the supervision of either their own medical attendant or of the nearest ante-natal clinic.

INDUSTRIAL HYGIENE.

This is another section of preventive medicine which, so far as this State is concerned, has developed almost entirely within the last twenty years. In 1893 a report was made by Dr. Ashburton Thompson into the effects of lead upon the mine workers at Broken Hill⁽¹⁵⁾; and soon after Dr. Robert Dick took up duty in the Newcastle district in 1898 he investigated the incidence of lead poisoning amongst the workers at a large smelting works in the district.

A division of the department to deal entirely with industrial hygiene was established in 1923 to meet the needs of claims then before the Arbitration Court which concerned the health, comfort and well-being of employees engaged in sandstone tunnelling, at pottery works, textile works, etc. The court asked the Department for assistance in making such inquiries, and Dr. Charles Badham was appointed as Medical Officer of Industrial Hygiene.

The earliest investigational work undertaken by the Section dealt with problems of ventilation, industrial poisoning and certain dust diseases of the lungs. The work in ventilation, begun in the textile mills, was extended to theatres, factories and offices. The standards of ventilation set up as a result of these investigations are regarded as very appropriate for Australian conditions. The problem of lead poisoning was studied over a long period, and standards of diagnosis were put forward which were widely accepted. In collaboration with the second Government Analyst (Dr. H. B. Taylor) the interesting discovery was made that there was a normal excretion of lead in individuals residing in Sydney. Similar finding has been confirmed as regards local residents in many parts of the world.

As regards dust diseases of the lungs, a refined method of dust sampling was worked out, and it was largely responsible for bringing about hitherto unknown freedom from dust in various dangerous sandstone tunnel work.

For the past three years, large scale animal experiments have been in progress with dusts from coal mines. One of the objects of these experiments is to determine the dusts that may be used in coal mines to prevent explosions, and which, when inhaled, will not injuriously affect the persons employed in the mine.

In recent years more attention is given to bettering employment conditions in factories and workshops, more especially those where there are particular health hazards; and in several establishments a medical officer is engaged by the management to supervise the health of the employees. These officers invariably work in close co-operation with the Industrial Hygiene Branch of the department.

The following is a list of the more important "Studies in Industrial Hygiene" published by this Branch since 1923.

Studies in Industrial Hygiene.

Serial No.	Subject.	Publication Reference.
1	Textile Industry, Sydney, New South Wales—Investigation into the Health and Factory Conditions of certain Textile Workers.	Annual Report, Director-General of Public Health, 1923, p. 27.
2	An Investigation concerning the Ventilation and Sandstone Dust present in the Air of certain Sewer Tunnels under Construction at North Shore, and in other Sandstone Workings.	Annual Report, Director-General of Public Health, 1924, p. 52.
3	An Investigation concerning the Health of the Employees and the Ventilation in certain Wine Cellars.	Annual Report, Director-General of Public Health, 1924, p. 65.
4	An Investigation concerning the Working Conditions and Health of Quarrymen in certain Government Quarries in New South Wales.	Annual Report, Director-General of Public Health, 1924, p. 69.
5	An Investigation into the Sandstone Dust Hazard among Miners, Quarrymen, and Stonemasons in New South Wales.	Annual Report, Director-General of Public Health, 1924, p. 76.
6	An Investigation concerning the Incidence of Lead Poisoning in Motor Car Painters.	Annual Report, Director-General of Public Health, 1924, p. 90.
7	Lead Poisoning—Concerning the Standards which should be used in Diagnosing this Industrial Disease, together with a New Method for the Determination of Lead in Urine.	Annual Report, Director-General of Public Health, 1925, p. 52.
8	Concerning a Sugar Dust Explosion which caused Three Deaths.....	Annual Report, Director-General of Public Health, 1925, p. 79.
9	Notes on the Degree of Comfort Produced by Admitting with the Plenum Air of a Theatre a Mixture of Ozone and an Essential Oil Vapour.	Annual Report, Director-General of Public Health, 1925, p. 90.
10	On the Index of Comfort in the Ventilation of Theatres in Sydney, New South Wales.	Annual Report, Director-General of Public Health, 1926, p. 49.
11	The Cause of Occupational Dermatitis in Sydney Rubber Works in 1927.	Annual Report, Director-General of Public Health, 1926, p. 73.
12	Dust Sampling in Sydney Sandstone Industries	Annual Report, Director General of Public Health, 1927, p. 74.
13	Notes on a Fine Type of Pneumonokoniosis produced by Silicates and other Minerals.	Annual Report, Director-General of Public Health, 1927, p. 102.
14	Notes on the Ventilation of Cinema Theatres	Annual Report, Director-General of Public Health, 1927, p. 111.
15	How to Improve Atmospheric Conditions in Textile Mills	Annual Report, Director-General of Public Health, 1928, p. 53.
16	Bakers' Dermatitis from Activators containing Persulphates	Annual Report, Director-General of Public Health, 1930, p. 71.
	Industrial Hygiene Section	Annual Report, Director-General of Public Health, 1931-32, p. 62.
	Industrial Hygiene Section	Annual Report, Director-General of Public Health, 1933, p. 52.
...	International Silicosis Conference, Johannesburg, August, 1930. (Badham, C.)	Journal of Industrial Hygiene, vol. 13, 1931, p. 169.
...	Coal Miners' Lung (Badham, C. and Taylor, H. B.).....	Med. Jnl. Aus., vol. 1, 1933, p. 511.
...	Fibrosis of the Lungs in South Coast Coal Miners, New South Wales (Moore, K. R. and Badham, C.).	Health, vol. 9, 1931, p. 33.
...	Basophilia and Lead Excretion in Lead Poisoning (Badham, C.)	Med. Jnl. Aus., vol. 2, 1933, p. 816.

TUBERCULOSIS.

The history of tuberculosis in New South Wales dates back to 1770, when a seaman of the H.M.S. Endeavour who had died of consumption was buried on a headland at Botany Bay.

Tuberculosis does not appear to have been noticeably in evidence among the early settlers, but in 1863, 1871 and 1874 there are frequent references to its prevalence. In 1877 a sanatorium was established at Thirlmere; this was later (1898) taken over by the founders of the Queen Victoria Jubilee Fund as the Queen Victoria Home for Consumptives, and a further sanatorium was built at Wentworth Falls. The R. T. Hall Sanatorium was opened at Hazelbrook in 1909; and in the same year a Government sanatorium, with accommodation for 240 male patients, was opened at Waterfall; provision being made there two years later for 140 female patients.

Investigational and Preventive Work.—An investigation into deaths from phthisis in the metropolis was undertaken by Dr. Armstrong from 1902 onwards; and in 1904 the City Council passed a code of by-laws making pulmonary tuberculosis notifiable in the City of Sydney. In the same year the City Council undertook to establish a dispensary, but found that the city funds could not be used for the purpose. Eight years later the scheme for a dispensary was revived by the National Association for the Prevention and Cure of Consumption, and carried into effect in 1912 by the help of a private gift of money and a Government grant of £500. Four additional dispensaries were opened in 1913 of which three were in Sydney and one at Newcastle. The present pressing needs are for establishment of two further dispensaries, one for the Parramatta-Liverpool Districts and the other at Broken Hill.

In 1915 an amending Public Health Act was passed which provided for compulsory notification of pulmonary tuberculosis, and for the non-employment of tuberculous persons in the preparation of food, etc. The notification sections took effect in the Metropolitan and Hunter River Districts in 1915, Blue Mountain Districts in 1916, and were extended to the whole State in 1929.

For the purpose of co-ordinating the work in New South Wales which was being carried on by various organizations, a Tuberculous Board of Control was formed in 1926 of representatives of various organizations. This Board functions in conjunction with the Tuberculous Division of the Department of Public Health established in 1927, and is working effectively and smoothly for the combating of tuberculosis throughout the State. The Board is still faced with a number of unsolved problems as, for instance, the devising of

a satisfactory scheme for maintenance of dependents of patients who enter sanatoria. Many patients who are earning something whilst at home, or are in receipt of an invalidity pension, refuse to enter a sanatorium because the money they would forego by doing so is of assistance in their households.

Tuberculosis problems in this State and in Australia have been investigated at various times since 1904 by individual officers or Boards or by Conferences on which were representatives from the various States and the Commonwealth and some of these are listed below for convenient reference.

1. Bovine Tuberculosis in the South Coast District. Report of Board of Health on. Legislative Assembly, N.S.W., October, 1890.
2. Tuberculosis in New South Wales: Statistical Analysis of the Mortality from Tubercular Diseases during the last thirty-three years. John B. Trivett, 1909. Government Printer, Sydney.
3. Consumption: Report of a Conference of Principal Medical Officers on Uniform Measures for Control of Consumption in the States of Australia. Government Printer, Melbourne, 1911.
4. Report of Advisory Board as to the Best Methods of Dealing with Tuberculosis. R. T. Paton, President. Legislative Assembly, N.S.W., August, 1913.
5. Tuberculosis in New South Wales. Suggested scheme for Treatment and Control of. H. W. Palmer. Legislative Assembly, 1916.
6. Report on Tuberculosis by Commonwealth Committee, Causes of Death and Invalidity in the Commonwealth. Government Printer, Melbourne, 1916.
7. Tuberculosis: Dreyer's Antigen Treatment. Ferguson, Palmer and Badham. Report Director-General, Public Health, 1923, p. 51.
8. Report on the Sanatoria of New Zealand, South Australia and Victoria. H. W. Palmer, Legislative Assembly, N.S.W., 1924.
9. Report of Control of Tuberculosis in Australia. M. J. Holmes, Federal Health Council, 3rd Session, 1929, Appendix I, p. 19.
10. Report on Schemes of Compensation in Operation in connection with eradication of Bovine Tuberculosis. W. A. N. Robertson, *Ibid.*, Appendix 6, p. 77.
11. Bovine Tuberculosis in Man and Animals. Holmes & Robertson, Federal Health Council, 4th Session, 1930, p. 8.

DIVISION OF VENEREAL DISEASES.

Some of the earliest notes as to the prevalence of venereal disease in New South Wales are probably the occasional brief references to it in "The History of the Sydney Hospital from 1811 to 1911." This hospital was first occupied about June, 1816, and began its career with forty-two patients. Watson⁽¹⁶⁾, in describing the deplorable conditions existing during the hospital's first year (1816) remarks, "No attempt was at first made at segregation of the sexes, and in fact this was not considered necessary by the Principal Surgeon* as it was notorious that all the female patients were infected with venereal disease."

When Dr. James Bowman took charge in 1819 considerable reorganization of the hospital was effected, and segregation of the sexes was maintained by stationing a gatekeeper at the entrance to the female wards. Classification of disease was initiated, and in 1820 the middle southern ward on the upper floor was devoted to the treatment of syphilis only. Reference is made later to the establishment in 1859 of a male lock ward "when the new south wing provided much additional accommodation at the hospital."

In 1879 the Sydney Hospital authorities urged upon Sir Henry Parkes, the then Colonial Secretary, the necessity for establishing a separate lock hospital—in part owing to the shortage of hospital beds and in part to remove an objectionable class of patients from the general hospital. As a consequence of this deputation it was decided to convert the Moorcliff Eye Branch at Miller's Point into a lock hospital, but opposition by local residents led to abandonment of a proposal which had had the support of the Medical Adviser of the Government (the late Sir Charles Mackellar). In a report in 1883 Dr. Mackellar stated that venereal disease existed to an alarming extent in all classes of the community; that the police estimated that 300 women were living wholly on prostitution; that twice that number occasionally supplemented their income in the same manner, and that a total of 900 women in Sydney at that time were very likely to disseminate the disease.

The shortage of hospital beds was acute at this time, and the emergency wards erected at Little Bay in 1881 for accommodation of smallpox contacts and patients, were again brought into use to relieve Sydney and Prince Alfred Hospitals of convalescing typhoid patients or chronic cases of illness, in order to permit of admission to those hospitals of acutely ill patients. About the same time (1883–1884) one of the wards at the Coast (Little Bay) Hospital was utilised for male venereal cases, and from that date onwards bed accommodation for male venereal cases has been provided at that hospital. Female bed cases were provided for at the Sydney Hospital until 1905, and some years later provision was made for such cases at the Royal Prince Alfred Hospital.

Attention was drawn by the Naval Authorities in 1906 to the amount of venereal disease contracted by the ratings while in port at Sydney, and an attempt was made to control prostitutes by an amendment of the Police Offences Act. In 1908 the Prisoners Detention Act was passed, under which convicted imprisoned male and female persons suffering from venereal disease could be detained until cured. A weak point in the Act was that persons subject to a fine could not be detained once the fine was paid; this defect was overcome by the amending Act of 1918.

The public outlook concerning venereal disease has greatly altered in the last twenty-five years. In 1910 considerable publicity was given to an announcement by Professor P. Erlich that his investigations for an arsenical compound for the treatment of syphilis had been successful by the discovery of Salvarsan, or "606." A second event that has specially influenced the treatment and control of venereal disease is the advance made in laboratory technique for the diagnosis both of syphilis and gonorrhoea by means of blood tests; and, most importantly, the World War concentrated attention on the great wastage of man power through these diseases, and the national need for their prevention and adequate treatment.

In a report issued in 1919 the late Dr. Richard Arthur⁽¹⁷⁾, M.L.A., pointed out that prior to 1914 there had been no organised effort "to supply efficient medical treatment to persons suffering from venereal disease." Such treatment as had been available could, he stated, be obtained during the afternoon only at certain outdoor departments of the three large general hospitals; and as the majority of persons requiring treatment were unable to attend during the daytime a very large proportion of the cases of gonorrhoea were treated at night-time by chemists, who in some instances undertook to prescribe for syphilitic cases also. In this report Dr. Arthur summarised the existing facilities for treatment, and submitted a comprehensive scheme for their extension and improvement.

* D'Arcy Wentworth.

Following the publicity given in 1910 to the successful result of Professor P. Erlich's search for an arsenical compound for the treatment of syphilis, a demand arose for such treatment to be made available to those who could not themselves obtain it. Investigations were carried out by Dr. R. J. Millard and a report was presented to Parliament in August, 1911, on the results of administration of Salvarsan to 170 patients at the Coast Hospital⁽¹⁸⁾.

In April, 1914, a public health portfolio was created, the late Hon. Fred Flowers, M.L.C., being the first New South Wales Minister of Public Health. In an interim report dated June 21st, 1914, Mr. Flowers⁽¹⁹⁾ stated that for the purpose of making better provision for treatment of venereal disease what were known as night clinics would shortly be opened in Sydney to provide for patients who could not attend hospitals in the day time. The first night clinic in Sydney was opened in the basement of the Health Department (Hospital Admission Depot) on 31st July, 1914, just at the eve of the Great War. This clinic had to be closed on 31st August, 1914, after operating for one month, owing to the demands on medical officers for war service. By arrangement with the Health Department a night clinic was opened at the Royal Prince Alfred Hospital early in January, 1915. The demand for treatment at this clinic was so great that the medical staff available could not cope with the 1,300 patients who sought treatment; the number was then fixed at 700, later reduced to 400, and then to 200. A similar clinic was opened at the Sydney Hospital in 1917; and subsequently at other hospitals.

The direful effects of these diseases on the health of troops in camp or returning from service abroad had focussed public attention on the need for legislation, and the Venereal Diseases Act for their notification and control was passed in 1918, but owing to the influenza outbreak was not brought into operation until 1st December, 1920.

Facilities for the treatment of women and young children were provided for by the opening of a special clinic in 1923 at the Rachel Forster Hospital for Women. It proved so successful that in 1928 the Government provided and equipped a new building for clinic purposes at the hospital. The clinic at this hospital has been staffed from its inception by women medical officers attached to the Health Department.

In 1924, after an interval of nine years, a clinic for treatment of males was again opened at the Health Department. It was staffed from the Coast (now the Prince Henry) Hospital, and was open for treatment of syphilis on two nights a week. This clinic was a decided success and continued in operation until June, 1933, when it was absorbed by the new continuous clinic in the Division of Venereal Diseases housed in a remodelled building at the same address.

To further co-ordinate control of venereal disease activities a Division of Venereal Diseases was created, and Dr. Cooper Booth was appointed in charge of it early in 1929.

From being merely a question of providing adequate hospital treatment, venereal disease has now become a very active concern of public health departments, more particularly during and since the years of the Great War. Advances made in methods of treatment and diagnosis by serology tests have called into existence special laboratory sections and treatment clinics. Approximately half the total tests of 80,000 or more carried out annually in the Microbiological Laboratory of the Department (*i.e.*, approximately 40,000 a year) are for the purposes of diagnosis or as a guide for treatment of venereal disease. These examinations are of blood for Wassermann or Kahn tests or complement deviation tests for Neisserian infection and smears for detection of gonococci.

There are now in operation in the metropolitan area two continuous clinics, one for men, and one for women, and eight non-continuous clinics attached to public hospitals. The continuous clinic for males was opened at the Health Department in June, 1933. From its inception it has proved very successful, and gives promise of a minimum yearly registration of 2,500 patients, and 85,000 attendances.

At country centres treatment for syphilis is available at practically all district hospitals, and at the large seaport town of Newcastle modern facilities for treatment of both male and female patients have recently been provided.

The work of the Division also includes an active educational campaign against venereal disease by means of posters, booklets, films, lectures, wireless talks, personal advice, etc., etc.

(1) Public Health in Australia. J. H. L. Cumpston, *Med.J.Aus.*, vol. 1, 1931, 491.

(2) Water Supply of Sydney, Past, Present and Future. T. W. Keele, *Proc.Roy.Soc.*, N.S.W., 1908.

(3) Sydney's Water Supply and Sewerage, 1918. T. J. Roseby. (Government Printer, Sydney).

(4) Sydney City and Suburban Sewage and Health Board, Progress Report. Legislative Assembly, May, 1875.

(5) Sydney City and Suburban Sewage and Health Board, Twelfth and Final Report, May, 1877, p. 8.

(6) Sydney City and Suburban Sewage and Health Board, Eleventh Progress Report of Committee appointed to inquire into the State of Crowded Dwellings and Areas in the City of Sydney and Suburbs, so far as it affects Public Health, August, 1876.

(7) Report of the Board of Health upon the late epidemic of Smallpox, 1881-1882. C. K. Mackellar, Legislative Assembly, 1883.

(8) John Ashburton Thompson, an Eminent Epidemiologist. W. G. Armstrong, "Health," v. 3, 1925, 97.

(9) Australasian Sanitary Conference of Sydney, N.S.W., 1884. (C. K. Mackellar, President) Legislative Assembly, N.S.W., 1884.

(10) Outbreak of Typhoid Fever, Leichhardt, due to Polluted Milk. Department of Public Health, Sydney, 1885-6.

(11) Aetiology of Plague, deduced from its Epidemiology, as observed at Sydney, during the years 1900-1904. J. Ashburton Thompson, Department of Public Health, Sydney, 1905.

(12) Reports of the Board of Health on Plague in N.S.W., 5th Report (1905); 6th (1906); 7th (1907). J. Ashburton Thompson, Department of Public Health, Sydney, 1906-8.

(13) Report of the Tenth Outbreak of Plague at Sydney, N.S.W., 1921-22, W. G. Armstrong, *Ann. Rept.*, Dir.-Gen., of P.H., N.S.W., 1922, p. 31.

(14) Causes and Prevention of Maternal Morbidity and Mortality. E. Sydney Morris, *Med.J.Aus.*, vol. 2, 1925, 301. *Ibid.*, 338.

(15) Broken Hill Silver-Lead Mines: Report of Board appointed to inquire into prevalence and prevention of Lead Poisoning. J. Ashburton Thompson, Chairman. Government Printer, Sydney, 1893.

(16) The History of the Sydney Hospital from 1811 to 1911. J. Frederick Watson, M.B., Ch.M. Government Printer, Sydney, 1911.

(17) Report on the Existing Facilities for the Treatment of Venereal Diseases in New South Wales, with Recommendations for their Extension and Improvement. Richard Arthur, M.A., M.D., M.L.A. Government Printer, Sydney, 1919.

(18) Report on 170 Cases treated with Salvarsan. R. J. Millard, M.B., Ch.M., D.P.H., Department of Public Health, N.S.W., 1911.

(19) Interim Report of the Minister of Public Health (Hon. Fred. Flowers, M.L.C.). Legislative Assembly, 1914.



